THE
CHANT OF THE PIPES

SETON GORDON F.R.S.E.

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THE CHARM OF THE HILLS

A FORMER HOME OF THE KITE

THE CHARM OF THE HILLS

BY

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WITH THIRTY-TWO PLATES

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TO

ONE WHO LOVES THE GLENS

AND CORRIES OF THE HILLS

PREFACE

It has often been suggested to me that I should publish in book form a selection of articles which have appeared in various papers and magazines during the past few years, and these pages are the result of the suggestions.

The photographs have been taken at every season of the year, but the majority between the months of May and July, when on the hills there are frequently no hours of darkness, but when the last rays of the setting sun are replaced, in the north, by the infant dawn.

I have spent much time on the hills in the compiling of this work, but there are certain days which live in the memory with singular vividness. For instance, a friend and I once passed a night at an eagle's eyrie far up a lonely glen, in the hope of being able to photograph the mother bird with the first rays of the sun.

Perhaps the most interesting days of my experience have been spent at the summer haunts of the snow bunting, often at a height of over 4,000 feet above sea level, where a snowfall may be looked for during any month of the twelve. On one occasion I penetrated to the nesting haunt of the snow bunting at dead of night—guided by the uncertain light of the moon—and as I lay on the hill-side the song of the snow bird was borne across the corrie on the still air at exactly an hour and five minutes after midnight. Very wild and beautiful were the notes of the mountain singer as he greeted the dawn at an hour when the glens were still wrapped in gloom, and I was fully appreciative of the privilege I enjoyed in listening to his song.

Another expedition which I recall was made to the high hills during the summer of 1909, with the intention of photographing the snow bunting—which I believe had never been achieved at that time. After a long walk through the night, we reached the nesting home of the bunting at sunrise, and were fortunate enough to obtain, before six o'clock, a series of photographs of a young bird.

While studying ptarmigan at their nesting haunts in mid-winter, a friend and I were overtaken by a terrific blizzard, and, more by good fortune than anything else, were able to reach the shelter of the lower grounds.

For the photographing of hill birds I consider the month of June is most suitable, though during July—and especially during the first fortnight of that month—I have frequently secured interesting pictures of the young of the golden eagle and ptarmigan.

As a natural result of their exposed nesting grounds, the breeding season of mountain birds is a precarious and uncertain one, and I have seen young ptarmigan as late as the third week in September.

I have watched the parent eagle carry a grouse to her young, appearing, with her prey, extremely like an aeroplane, and have heard the yelp of the eaglets as they called for their morning meal; while on one occasion I was fortunate enough to observe the initial flight of a pair of eaglets from their eyrie.

In conclusion, I would tend my grateful thanks to the editors of all those papers through whose kind permission I have been enabled to make use of articles which have appeared in their pages, and especially to the editors of *Country Life* and of the *Scotsman*, who have taken so much trouble on my behalf.

SETON GORDON.

ABOYNE, *September*, 1912.

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THE CHARM OF THE HILLS

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CHAPTER I

THE MOUNTAIN CHARM

FOR the lover of the grand in nature the mountains have a singular fascination. The children of the mountain, too—the stern and impassive eagle and the gentle ptarmigan—seem to have instilled into them the true spirit of the mist, and thus appeal to the nature lover more forcibly than the denizens of less romantic regions. The mountains attract at every season of the year—in winter, when their corries are buried deep under their snowy covering; in spring, when this snowy mantle has been broken by the strengthening sun, aided by soft breezes from the south; and in summer, when an occasional snowfield lingering here and there still reminds one of the winter that is past, but when the corries are clothed with grass of an exquisite green.

It is during the first days of August that we make a visit to the hills. The heat wave has broken, and the weather is unsettled, though giving promise of better things to come. For some days past a mild breeze from the south has been blowing, and under its genial influence the remaining fields of snow are rapidly diminishing. It is early morning as we leave the shelter where we have been staying overnight. The sun has just risen, and shines brightly on the high ground to the westward, though the pass is as yet in twilight. Thunder showers the night before have cleared off the haze, and the mountains around us stand out with wonderful sharpness in the early morning light. During the hours of darkness a herd of stags have come down to the riverside, and as we open the door of our shelter we find them grazing scarce 100 yards from us. Evidently they are taken by surprise, for at first

they show no inclination to move, but having realised that their arch-enemy, man, is in such close proximity, they set off in a mad rush, and do not pause until the river is crossed and they have climbed some distance up the hill-side opposite. Our way first leads up a steep corrie, down which rushes a swift mountain burn, and in the soft sunlight every blade of grass stands out a vivid green. The corrie is rich in plant life, and we come across several white-flowered specimens of the cross-leaved heath (*Erica tetralix*). The cow-wheat (*Melampyrum sylvaticum*) still shows its delicate blossoms in favoured situations, and we meet with at least two Alpine forms of the stag-horn moss. We surprise a fox on an early morning prowl, and the marauder crosses our path with easy stride; his tail is held erect, and this gives him a somewhat unusual appearance. The top of the corrie reached, we have a gradual ascent until a height of some 3,600 feet is reached, when we call a halt and wait for some time on a slope covered with "scree," where the snow bunting has his home. In the earlier part of the summer the male bird is in almost continuous song from 1 A.M. until late afternoon, but now the nesting season is over he is silent, and though we watch the nesting site carefully, we are unable to see any traces of the birds.

The sun now shines with some power, and the breeze from the south-west is, even at this altitude, soft and pleasant. Descending to the burn which drains the corrie, we come across a ptarmigan's nest built on a tiny "island" of vegetation in the midst of acres of granite boulders. The young birds have left the nest, in which remain only the broken egg-shells to show that it has been in use this season. The nest of the ptarmigan is a very rudimentary structure, and is sometimes devoid of any lining; but in this instance the parent bird made use of some lichens which happened to be growing only a foot from the nesting hollow. It is on the opposite hill-side that we come across the first ptarmigan with young. She has only two chicks, which are just able to take wing, but after flying a few yards they drop and hide amongst some stones. We have recourse to low cunning in order to call up the parent bird to obtain some photographs of her. A few plaintive whistles soon bring her towards us, and as the whistling still continues, motherly anxiety conquers fear

and the bird runs round us in great distress. We keep up the deception a little longer, and the ptarmigan ventures to within a few feet, uttering croaking cries of distress, and often opening her bill wide with anguish. After a time, however, she begins to realise that she is being imposed upon, and we move off, having obtained a number of photographs. From the top of the ridge we have an excellent view of the eternal snowfield lying in a sheltered corrie at the head of the Garbhchoire. The field is as yet unbroken, and is some 200 yards in extent. The rocks, to within a few yards of the snow line, are bright with buttercups, while below the drift are mosses of the brightest green, watered by the stream of water emerging from the snow.

A short distance west of the corrie another snowfield of enormous proportions is formed every winter, but lies in an exposed position facing south-west, and for this reason melts rapidly. At the time of our visit it is only some 70 or 80 yards long, and of no great depth, though in early June the depth was estimated at 40 feet and the length at 500 yards. On the surface of the snow a wheatear runs about actively in search of flies, and we note the marks of deer which have gone to the field to escape the unwelcome attention of the "cleg" fly during the hot weather. We are now nearing the Wells of Dee, and make a slight detour to where the river issues from the ground at a height of close on 4,000 feet above sea level. There are two springs within a short distance from each other, each of which discharges a considerable quantity of water; so the Dee, even at its source, is a fair-sized burn. On either bank is excellent grass, and we discover many feathers of the ptarmigan, and also one from a golden eagle. Footmarks of the deer are everywhere, for the feeding here is good, and the stags are constantly crossing the plateau from one forest to another. The weather has now changed for the worse, for the wind has backed and heavy clouds are crossing the hills, blown before a gale from the south. We make our way to the northern extremity of the plateau, and look down on Loch Coire-an-Lochan, the highest loch in Britain, which lies at a height of 3,250 feet above the level of the sea. A small burn, having its source on the plateau, falls over the precipices which tower above the loch on its

southern side, and offers a conspicuous mark from the valley of the Spey. To-day, however, the weather northwards is extremely hazy, and the houses of Aviemore can be made out with difficulty.

We remarked earlier in the day on the small amount of snow on the hills to the west. Ben Alder, a hill on which snow usually lingers until very late in the season, could only boast of one small patch, and Ben Nevis, too, seemed to have less snow than usual. The haze is now too thick to distinguish any distant object, but from the summit of Braeriach, 4,248 feet above sea level, we have, across the Garbhchoire, a very fine view of Lochan Uaine (the green loch) nestling in the corrie of Cairntoul, while a little to the right Monadh Mor, with its snowy corrie, is conspicuous. The gale strikes full on the precipices beneath us with the noise of a burn in high spate, and the wind, rushing up the rocks, passes high over our heads, leaving us in comparative calm. Vegetation at this elevation is scarce, but we note that the cushion pink—*Silene acaulis*—extends right up to the summit cairn, and the Alpine willow—*Salix herbacea*—is maturing its seed in favoured situations. For some hours we have been aware of a faint smell of burning heather, and on the mist clearing somewhat to the south we can make out a fire of considerable proportions on one of the hills in this direction. A fire at this season of the year must needs be accidental, though the damage done would be much less than would have been the case earlier in the season, when the grouse had eggs or small young. From the summit of Braeriach we look down into Corrie Bhrochan, and see, close on 1,000 feet below us, three stags grazing on the luxuriant grass in the bottom of the corrie.

A detour is now made in order to visit the snowfield at the end of the Garbhchoire. Wheatears in abundance are met with, and an occasional meadow pipit, by its excited chirruping, leads us to imagine that a nest is not far off. Flying high from the north a solitary ring ousel crosses the glen and alights on the rocks below Lochan Uaine. Though the locality is an excellent one for ptarmigan, we see no traces of young or old birds until we reach the edge of the snowfield. Here a hen ptarmigan with a solitary half-grown chick is disturbed. The mother bird stumbles along in front

of us feigning injury, and ultimately pauses on the rocks some fifty yards above us. A successful imitation of the cry of a ptarmigan chick causes her to lose her balance, and she falls some distance before recovering herself, flying down to near our feet, where she runs about in extreme anxiety for a while; but she, too, discovers the deception in time. Vegetation is luxuriant below the snowfield, from which a stream of water is emerging. A plant of *Silene acaulis* is in full blossom—quite eight weeks late—while numerous violets, not long released from their snowy mantle, are opening their delicate flowers. Over the precipice a male peregrine falcon is sailing. He seems unwilling to leave the neighbourhood, and we imagine he may have an eyrie amongst the rocks, for the locality is an ideal one. As we descend the corrie a heavy thunder shower sweeps down from the south, drenching us completely in a few minutes, and a cloud envelops the corrie of Braeriach, though the summit is still free of mist. We are interested in coming across a well-grown brood of ptarmigan at the exceptionally low elevation of less than 2,000 feet. Possibly an eagle may have driven down the birds, for it is very rare indeed for the ptarmigan to descend below the 2,500 feet level. After the shower has passed the air becomes remarkably clear, and as we make our way down the pass the afterglow in the north-west strikes full on the south hills with fine effect. Save for a soft, filmy cloud just resting on the summit of Cairntoul, the hills are now free of mist, and the murmur of the river as it hurries through the glen is the only sound to break the stillness of the gathering night.

CHAPTER II

WHERE THE PTARMIGAN NESTS

WE have always been singularly fascinated by the ptarmigan. He seems to us to be essentially a lover of the wild and noble places of the mountain country, and a day spent at his haunts is always one on which the mind loves to dwell. It is on a sunny May afternoon that we set out for the shelter where we intend spending the night previous to making for the ptarmigan country early next morning. The weather, after a night of heavy rain, is rapidly hardening, though on the summit of dark Lochnagar clouds are still lingering, and the roads are in excellent condition. In crossing a watershed we come on a hill with a gradient of one in four, and it is some little time before the car can be induced to ascend; even then it is only by the help of our companion, who unselfishly dismounts and pushes vigorously behind, that we surmount the obstacle. Once the Gairn valley has been left behind the going is easy, and the road up Donside is in excellent condition. At Corgarff we call a halt, and ultimately decide to spend a night at the inn which overlooks the Don and is situated at the great height of 1,400 feet above sea level. Here we have the plaintive curlew for our companions, and occasionally the pipe of the golden plover mingles with their vibrating cries.

The morning opens brilliantly, the sun shining brightly in a sky of deepest blue, and everything betokens a day of intense heat as we set out up the hill. The larches fringing the Don valley are giving off their delicious aroma in the cool air, and lapwing and redshank fly restlessly near their nesting grounds. Soon, however, we leave the last traces of civilisation behind us, and our way now lies through open moorland, where grouse in plenty rise at our feet. In one instance we come upon a cock grouse courting a hen bird; he

is so absorbed in displaying his beauties to the somewhat unresponsive hen that he is quite unaware of our presence until we are close upon him, and we obtain an excellent view of him as he walks slowly through the heather with outspread wings. The beautiful avern (*Rubus chamæmorus*) is rapidly pushing its shoots above ground, and in a short time the whole hill-side will be covered with its delicate white flowers. After crossing a ridge, we descend into a corrie, down which a mountain burn dashes to join the larger stream which drains the glen. At one point we strike a narrow gorge, and from a ledge on the rock a hen kestrel soars out with the morning sun full on her plumage. With a little difficulty we obtain a view of her somewhat primitive nest, in which three much-bespeckled eggs are lying. A photograph of the nest is secured after a certain amount of difficulty, but the hen bird does not show herself while we are in the vicinity. Having crossed the glen, we have in front of us the giant bulk of the hill on whose plateaux the ptarmigan have their home, and on the higher corries extensive snowfields are still lingering, in spite of the warm sou'-westers which have lately been blowing. The heat is now intense, but a cool breeze blows up from an easterly point, while to the westward gathering clouds seem to prophesy a coming storm. Through the glass we see, on the snowfields, numbers of stags either standing or lying full length, for red deer are very sensitive to heat, and are always ready to resort to the snowfields whenever the weather is at all warm. We note that the number of hoodie crows in the neighbourhood must be considerable, for we repeatedly come across the sucked eggs of grouse, which the hoodies have carried to some spring or streamlet to enjoy at their leisure. Why the hoodies should always take an egg to water is somewhat obscure, for an egg is such a liquid form of nourishment that one would imagine it would present no difficulties of manipulation to the artful hoodie. Possibly, however, the thief tests his booty at the water and rejects it if not fresh.

As we reach the first snowfield we have an excellent view of a species of hawk which is soaring above us at an immense height. We surmise it to be a peregrine, but at the distance it is quite impossible to do anything but conjecture as to its

identity. At the top of the corrie, and close on 4,000 feet above sea level, is a massive rock of granite, which offers a conspicuous mark for many miles around, and on its summit we see a small, dark object. Through the glass this resolves itself into the form of a golden eagle, and this noble bird, as he stands on his point of vantage, makes a curiously effective picture, for the sun strikes full on his feathers and transforms him into a golden eagle in very truth. He does not await our closer approach, however, for while we are still a mile from him he has spread his wings and vanished over the ridge to the north. We find, shortly after reaching the 3,000 feet contour, unmistakable signs of a recent snow-storm, which we imagine must have destroyed the nests of any ptarmigan which were brooding at the time, but on the edge of a bog which marks the source of one of the mountain burns we flush a cock ptarmigan, who resolutely refuses to leave the neighbourhood. He flies round the locality in circles, or runs along croaking excitedly the while, and we have every reason to suppose his mate is brooding somewhere near, but a long-sustained and careful search fails to disclose the whereabouts of the nest. As we reach the higher grounds we find a considerable amount of new snow, showing that a heavy storm has been experienced on the hill, and we fear that every ptarmigan's nest must have been destroyed, for the birds are nearly all in pairs, and fly right away when flushed. Carpeting the ground are many plants of the mountain azalea (*Azalea procumbens*), and their delicate red flowers stand out in striking contrast to their sturdy xerophytic leaves. The flowers of this little plant seem to be formed the previous summer, for they appear on the hills only a very short time after the winter snow-cap has vanished. The plateau we are traversing is several miles in length, and on its south-western extremity several giant worts arise. They are formed of granite, and while the rest of the hill has been weathered away, these rocks have withstood the violence of the winter storms, and are 30 or 40 feet above their surroundings. In their vicinity we find several large flat boulders, in which curious basin-shaped hollows have been worn. In places these are of considerable depth, and are half-full of rain-water. It has been stated that these hollows have been worn by

the action of small stones which have accumulated in the natural depressions of the rocks, and have been violently blown round the hollows by the action of the wind, thus forming in the course of many years the deep cavities which now almost invariably contain water.

Our view from the summit is an extensive one. To our west Ben Muich Dhui, and to its right Cairngorm, still carry a heavy coating of snow, and south-west Beinn a' ghlo (the mountain of the mist) stands out with great clearness; while in the valley beneath us the Avon hurries down from its source in dark Loch Avon to meet the Spey below Tomantoul. We have scarcely started on our return journey when we hear in front of us the soft whistle of the dotterel, and as we are extremely anxious to obtain photographs of the nest, we lie prostrate on the ground and await events. The dotterel—always a curiously tame bird—soon approaches, and runs around us in an agitated manner, every now and again stopping short and jerking its head with a characteristic motion. Apparently it is a hen bird, but shows no signs of returning to its nest, so we conclude that either the eggs have not yet been laid or else the nest has been destroyed by the recent storm. As we re-cross the plateau the burns are in many places still running beneath their winter covering of snow and ice, and around us the ptarmigan are croaking as we trespass on their domains. The sky is clouding, and as we pause before descending to the low grounds a view of extraordinary beauty is seen towards the north-west. In every other direction the sky is clouded, but here the sun—now low on the horizon—lights up the Ross-shire hills with superb effect.

And now we leave this scene of grandeur and make for the valley beneath. Here, in spite of the warmth, the birches are scarce showing a single leaf, though the grass, cropped short by the red deer, is of the most delicate green. Hoodie crows are nesting in some of the birches, and from one of these trees we hear the cry of the cuckoo, sounding exceptionally clear in the still evening air. A wheatear, too, is in song, and a mountain blackbird pours out his clear, rich song—a song which is essentially of the hills—wild and passionate, and abounding in long-drawn, plaintive notes.

CHAPTER III

EARLY JUNE ON THE CAIRNGORMS

AFTER their long winter sleep, which lasts from October until mid-May, spring and summer join together on the lofty plateaux of the Cairngorm hills, and the snow disappears as if by magic, drifts lingering only in the most sheltered corries away from wind and sun.

It is on a perfect summer morning during the first days of June that we leave Aviemore and make our way up to Loch Eunach—lying between Braeriach and Sgorran dubh —at a height of some 2,000 feet above sea level. As we drive up the side of the Bennie the glen is looking at its best. On either side countless blaeberry plants are covering the ground with their leaves of the most delicate green; and the bracken, too, is wonderfully advanced, for its fronds are well opened, and in some cases have already reached a considerable height. The silver birches are at their best, and in marked contrast to their delicate foliage, weather-beaten pines extend to the limits of tree growth and raise their gnarled and twisted trunks to the sunlight.

Signs of life are scarce. A kestrel follows us for some way, and a few grouse are flushed, while an occasional gull sails past with graceful movement. We have occasion during the drive to remark upon the absence of snow in the corries of Braeriach. Only in Coire-an-Lochan are the snowfields at all extensive, and some of the corries are already quite clear. Loch Eunach reached, we leave the road and follow the hill path leading to Braeriach. A strong southerly wind is sweeping down from the loch, the waters of which are wonderfully clear in the strong sunlight, and we note the fact that in some parts of the loch the water appears of a deep green colour, due, we imagine, to the reflection from the bottom. At a height of 2,500 feet we meet the first ptarmigan.

He is a cock bird, and flies off, croaking loudly. Doubtless he has a mate brooding in the vicinity, but we push on, and soon reach the top of the corrie and the western plateau of Braeriach without having crossed snow once. The beautiful cushion pink is in full bloom, and large patches of flowers of various shades of crimson and pink carpet the ground from a height of 3,000 feet upward. They are at least a fortnight before their time, for it is usually late in the month before their delicate flowers open on these exposed uplands.

Having reached the plateau, we skirt the side of the hill and bear in a south-easterly direction towards Cairntoul. Here we have a stiff wind against us, and the temperature has fallen rapidly. We come to an immense field of snow quite 500 yards in extent and at least 40 feet deep, and at the edge of the field we flush a couple of dotterel, which make off with obvious reluctance. We watch them through the glass for some little time, and discover they are "house-hunting." Every now and again the hen comes upon what she considers as a likely nesting site, but, after having tried it carefully, comes to the conclusion that it is unsatisfactory, and leaves it in disgust. As we reach the shelter of Cairntoul the wind drops, the weather conditions become ideal, and on our descent to the Larig pass the setting sun shines on the snowy corries of Ben Muich Dhui with beautiful effect. On the southern corrie of the hill a deep wreath has accumulated on very steep ground, and as a result of the hot weather an avalanche has fallen from the snowfield. Evidently it is of very recent origin, for we can see the large blocks of frozen snow lying at the foot of the drift and the thin coating of ice still adhering to the rocks recently laid bare.

Just previous to reaching the corrie of the Corrour burn we come upon an extensive patch of the mountain azalea. This little plant has a similar habit to the cushion pink, though the stem and leaves are much more hardy, and the leaves persist throughout the winter. The flowers are of a most delicate pink colour, and the plants, for some reason, do not seem to thrive much above an elevation of 3,000 feet, though the cushion pink flourishes quite 1,000 feet higher. In the Corrour corrie vegetation is far advanced, and the blaeberry plants are giving off their delicious aroma in

the cool of this summer evening. We are somewhat surprised to find, only 2,000 feet above sea level, quite an extensive wreath of snow covering the burn. The gorge is here deep and narrow, and a great amount of snow is drifted into it during the winter storms—one of which we have every reason to remember in this particular corrie. Though close on ten o'clock it is still broad daylight, and the rushing of the Dee strikes pleasantly on our ears as we prepare to take what shelter we can in our somewhat exposed surroundings.

We are wakened at daybreak by the call notes of the grouse, and find a large herd of stags grazing just across the river. The rising sun lights up Cairntoul, but as yet is hidden from us under the shelter of Cairn-o'-Mhaim. Not a breath of air stirs, and all is still, save for the yelp of an eagle high up among the rocks of the Devil's Point. Cairntoul is wonderfully free of snow—only one or two strong wreaths linger on its stony slopes—and at the head of the Corrour face the snowfields are considerably less than they were in mid-July the previous season, while the well-known drift on the east of Braeriach, immediately above the Pools of Dee, is also remarkably small. As we commence the steep ascent to Cairntoul the sun is shining with great brilliance, but heavy clouds gathering over Ben Muich Dhui seem to prophesy, even at this early hour, a coming storm. Numerous cock ptarmigan are flushed, and we discover a hen bird sitting on her nest. So confident is she that we are enabled to erect a cairn only a few feet from her, and set up the camera on this improvised stand. The ptarmigan sits motionless as a statue, and we are enabled to secure several photographs of her without causing her to leave the nest. On a rock some fifty yards away the cock bird croaks anxiously for some little time, but his mind seems soon set at ease, and he preens his feathers contentedly as we take the photographs of his mate.

The haze has now cleared away, and a bracing wind straight from the Atlantic sweeps over the plateau as we make for the Angel's Peak. Here, midway between Cairntoul and Braeriach, an extensive view of the Garbhchoire is obtained, and we are interested in comparing the amount of snow now in the corrie to that in preceding seasons. For the early

part of June the corrie is singularly clear. We remember, on June 19, 1910, looking over the corrie and noting that the infant Dee was running beneath the snow for a considerable distance. Now, however, though a fortnight earlier in the year, the river is clear the whole length of the corrie, and is partially hidden by snow only where it falls over the rocks of Braeriach, at a height of nearly 4,000 feet above the level of the sea. The western extremity of the corrie—the Fuar Garbhchoire—still carries several extensive snowfields; but this corrie is, perhaps, the most arctic of any on the Cairngorm mountains, and has never, within living memory, been known to be completely free of snow, even at the end of the hottest summer.

Looking back, Monadh Mor, to the southwards, has many snow-wreaths in its sheltered corries, and through the glass we can see deer standing or lying on the snow, where they have taken refuge from the intense heat of the sun. In the distance the southern Grampians stand out sharply in the clear air. Glas Maol—on the boundaries of Aberdeenshire and Perthshire—is recognised by its characteristic horseshoe snow drift, but the drift has greatly dwindled—in fact, is already of less extent than when we visited the hill in mid-July of 1910. Everywhere we notice the same thing, and even Ben Alder, to the west, carries exceptionally little snow. Ben Nevis is mist-capped, and the hills towards Skye are also covered by a mist which is sweeping in from the Atlantic.

On a hill to the far south-west an enormous heather fire is raging. The whole hill is enveloped in a dense pall of smoke, which is blown in a cloud for many miles to leeward, and we imagine that great havoc is being wrought amongst the nests and newly-hatched young of the grouse. We now strike westwards, and soon reach the head of Loch Eunach, which sparkles brightly in the sunlight. On the tableland which marks the head of Glen Feshie an immense herd of deer are grazing, for the grass on the high grounds is exceptionally far forward, and even at this altitude is showing up a rich green.

As we descend towards the loch we lose the fresh wind, and the heat is intense. We note that quite a large snow-wreath, which we marked during our ascent, has completely

disappeared, and that the water of the burns is quite tepid, except where it has just issued from a snowfield. As we reach Loch Eunach heavy clouds are sweeping up from the west, and are just skimming the summit of Braeriach; but of the long-looked-for rain there is little or no sign, and as we drive down the glen by the side of the Bennie the sun once more asserts itself and shines on the snowy corrie of Cairngorm, lighting up the extensive snowfield with brilliant effect.

CHAPTER IV

AT THE HAUNTS OF THE EAGLE

ALTHOUGH breeding in the wildest and most exposed regions of the Highlands, the golden eagle is one of our first birds to commence nesting operations, and as early as the end of January the birds are collecting material to repair the old eyrie, or else are busily engaged in constructing a new one. In 19—, after a very frosty New Year, the weather suddenly changed for the better on January 8, and on that day we noted a pair of eagles soaring round their eyrie. On revisiting the locality on April 17 the keeper informed us that he had seen the hen bird sitting nearly three weeks previously, and had also seen the cock alight on the top of the rock where the eyrie is situated. This particular eyrie is very cunningly placed under the shelter of a projecting rock, and cannot be reached without the aid of a rope; in fact, it is impossible even to see the eggs from any point of vantage. The morning on which we visited the eagle at her home was exceptionally fine, with a cloudless sky and very warm atmosphere, so we had no fears as to the results of the eagle's enforced absence from her eggs. We had hoped to obtain a snapshot of the hen as she rose from the nest, and for that purpose crept up cautiously until within a few yards of the eyrie, and then shouted and whistled, thinking the bird would immediately take flight.

But there were no signs of life, and as we could not actually see into the nest, we surmised that the hen was off feeding. Just as we were on a dangerous part of the cliff, however, and in such a position that the use of the camera was an impossibility, the eagle sailed leisurely off the eyrie, and so the opportunity of a photograph was lost. She appeared to be an old bird, judging from the lightness of her colouring, and soared off till she was a mere speck in the sky.

After trying vainly to reach the eyrie from two points, we made our way to a very old nest of the fork-tailed kite, which has now become quite extinct, so far as Scotland is concerned, and it was very interesting to see that although the nest had not been tenanted for quite thirty years, yet it still seemed in perfect order, as though repaired regularly every season. The district we were visiting boasts of a good number of eagles' eyries, so the following day we set out to try to discover a nest which was, we had reason to believe, situated on the other side of the valley, in an ancient fir tree. The weather had completely changed, and instead of finding bright sun and warm breezes, we had to fight our way against a strong northerly wind, with squalls of snow and hail. We had doubts as to the eyrie being occupied, as the previous season the hen bird had been found dead on the nest, with part of her bill broken right away—although whether this was actually the cause of death it would be difficult to say—and when the tree was reached, the eyrie was found to be quite deserted, with great numbers of the unlucky bird's feathers still clinging to the sticks of which the nest was composed.

When near the eyrie the cock bird came sweeping over the brow of the hill, and on catching sight of us immediately began to rise against the wind. Higher and higher he sailed, and it was wonderful to see how he ascended with wings practically motionless, utilising the wind in a marvellous way. In the space of five minutes he had risen to an extraordinary height, and when some passing clouds came across, it was noticed that he had risen a good distance above them. By this time he looked no bigger than a lark, and ultimately became quite invisible, having reached a height of perhaps 3,000 feet above the glen. Northward from the nest, which was situated in the topmost branches of a pine, at a height of about 1,800 feet above sea level, the heather gradually became obliterated by the heavy covering of snow, and the hill-top, some 4,000 feet high, appeared dimly through the mist, while blinding clouds of "spindrift" were swept across the plateau before the gale.

Some miles to the north-west of the eyrie referred to is situated one of the highest-placed eyries in Scotland. It is

built on a lofty precipice, at a height of more than 3,000 feet above the sea. When nesting at a comparatively low level, the eagle begins to brood about March 15, but in this particular case it would be almost impossible for the birds to nest at such an early date, as the precipice is deep in snow till late in April.

In 19—, during exceptionally fine weather about the beginning of April, we had noticed both birds soaring close to the nesting cliff, and so, the day after the expedition referred to, we set out with the object of locating, if possible, the exact position of the eyrie. The day chosen for the expedition turned out an unfavourable one, however, as even in the glens the weather was very wild, with heavy showers of blinding hail. As the higher grounds were reached the snow became dry and powdery, and was swirled along in blinding clouds, so that it was extremely difficult to make headway. Above the roar of the storm we heard the melancholy call of the curlew, and noted a pair of oyster catchers flying down the glen at top speed. As the altitude was well on to 2,000 feet, it was rather unusual to meet the latter birds at such a height, but evidently they had taken up their quarters for the nesting season, as shortly afterwards we saw them making their way up the glen in the teeth of the gale. As we advanced the force of the wind increased every moment, and the spindrift was blowing in such dense clouds that at times we had to call a halt and struggle to keep our footing on the ice slopes. Never before had we experienced such a blizzard, and it was calculated that the wind was blowing at the rate of a mile a minute at the lowest estimation. At times there would be a sudden lull for a few minutes, and then we could see the ptarmigan running on the snow slopes and hear them calling weirdly to each other.

It was extremely interesting to watch their behaviour when the blizzard suddenly swept down upon them. They were evidently quite used to the storm, and as the gale reached them they squatted low on the snow, and even ran against the wind, crouching low all the time. We also noted a fox making off at our approach. He did not seem to be in the least hurry, but trotted slowly away, glancing now and again over his shoulder. Suddenly, however, when quite 200 yards

from us, he seemed to be greatly alarmed, and went off at top speed. Although the snow never actually ceased, we had some exceedingly fine views of the towering crags above us when the drift lessened, and across the valley could see now and again the hills to the east, with the sunlight on their snow-covered slopes. Upon reaching the head of the glen we found the storm raging here with tremendous force, and the ice-bound loch looked wild and desolate, with its farther shores hidden by the mist. To proceed farther was quite useless, as an extensive plateau had to be crossed before the eagle's nesting site was reached; so we reluctantly had to turn back and put off the expedition until more favourable weather conditions obtained. The descent of the corrie was a very simple matter, but care had to be exercised owing to the snow in places being covered by a sheet of hard ice. We had some good *glissading*, and it was a strange sensation to go down the hill-side with a roaring gale blowing at our back, and everything blotted out by the blinding snow. At the lower extremity of the glen the weather was much milder, and the snow comparatively soft, while large herds of deer were grazing on the grass at the edge of the burn.

The last and most pleasant day of our outing was the ascent of Ben Avon (3,800 feet), and for the climb we had quite perfect weather conditions. Even on the low ground the weather was extremely wintry, and from 2,000 feet upward we had continuous frost and snow. Just below the snow-line we came upon a clump of birches where several pairs of hoodies were nesting. In one of the nests a single egg had been laid, but it was as yet rather early to find the birds sitting, although we noted several of them lazily flapping their way across the glen. Making our way along the Quoich, we had Beinn a' Bhuird in front of us, with Carn Eas—bearing a huge cornice of snow—to our right. Every burn was covered with a snow bridge, and some of these bridges were quite 30 feet in height, a good deal of the snow having been drifted in the day before. During the early hours of the climb there had been snow squalls, but by the time the summit of Ben Avon was reached the weather was magnificent, with a bright sun and only a slight wind. As we were crossing the plateau on the summit we saw an

eagle high above us—a dark speck against the deep blue sky—soaring leisurely against the wind. Doubtless he was the mate of the bird sitting in the valley below us, as distance is nothing to the king of birds, who can fly ten miles in as many minutes, and that without any apparent effort.

From the summit of the hill we had a very fine view in every direction. West, the Cairngorms were just cloud-capped, and northwards we made out the Speyside hills and the Moray Firth, with the Avon valley just beneath us. To the south the view was specially striking, with Lochnagar and Beinn a' Ghlo very prominent; while eastwards Benachie was easily made out, and the whole range of the Grampians from Lochnagar down to Cairn-mon-Earn. The giant rocks on the summit of Ben Avon were thickly crusted with snow and ice, and behind each a deep wreath had been formed. Descending by Carn Eas, we had an easy walk back to the valley of the Dee, and as we were nearing Braemar, Lochnagar was looking more picturesque than we had ever before seen it, with its cairn standing out in the rosy light of the setting sun, while the rest of the hill in shadow was of a cold, greyish white. The nearer hills, plentifully streaked with snow, were also looking extremely beautiful, and in the foreground the winding Dee reflected the deep blue of the evening sky, flocks of oyster catchers whistling on the river banks as they took up their station for the night.

CHAPTER V

THROUGH THE LARIG GHRUAMACH BY NIGHT

Of all the Highland passes, there is perhaps none that appeals to us so strongly as the famous Larig Ghru (the forbidding pass), which links Aviemore with Braemar. We had often explored its corries during the hours of daylight, and a short time ago determined to make an expedition by night through its rocky fastness. Arriving at Aviemore one glorious summer afternoon about five o'clock, we drove to where the road ends on the outskirts of the famous Rothiemurchus Forest, and the Larig proper commences. The evening was an ideal one. As we made our way through the forest the Cairngorms stood out sharp before us in the sunlight, and we remarked on the amount of snow lying in the corries of Braeriach. On Cairngorm itself only a tiny patch was visible, and our driver informed us that at the corresponding season of last year the hills were carrying considerably more snow. Soon we forded the Druie burn—a by no means easy undertaking owing to recent heavy rains—and shortly after 6 P.M. reached the end of the driving road and started out on our walk. Scarce a breath of wind stirred the birches in the forest, and the midges soon began to make themselves unpleasant, but as we reached the higher ground a fresh breeze from the south swept down on us from the summit of the pass, and in its coolness we made more rapid progress. Before us stood the Lurcher's Craig, and farther up the pass we could make out the infant Dee, where, after rising on the plateau of Ben Muich Dhui, not far from the source of the Avon, it plunges down the side of the hill, and after running underground for some considerable distance, emerges by the Pools of Dee. This is one of the sources of the royal river; the other rises on the plateau of Braeriach, and is known as the Garbhchoire until it joins the first-mentioned stream at the base of Cairntoul. As

we gained the higher grounds the heather, which had hitherto been truly magnificent, began to show the effects of the severity of the weather, and we noticed that a heavy bank of mist was hanging low over the top of the pass. The sun was now setting behind the hills to the north-west with beautiful effect, and a dark thunder-cloud near the horizon was lit up a rosy red in its rays. Hill upon hill rose up out of the north and north-west as far as the eye could see, and nearer at hand the valley of the Spey stood out clear and sharp in the evening air.

Dusk was falling ere we reached the summit of the pass, and the mist was less than 100 feet above us, but the wind had died away, and the air was warm and intensely still. A wonderful view was obtained, looking back to the north, the mist acting as a curtain and disclosing now and again the Ross-shire hills standing sharply out in the afterglow; but to the south the view was indistinct. Walking now became difficult, and the path was often missed for a few yards. During one of these digressions we came across the nest of a ptarmigan, from which, of course, the young had been hatched some time previously. This had some slight interest, for while crossing the path in June the writer felt confident from the behaviour of a cock bird in the vicinity that a nest must be hereabouts, but was unable to locate it. The Pools of Dee were reached as the twilight was deepening, and here we rested for a few minutes while we admired to the full the grandeur of the scene spread out before us. Not a ripple disturbed the surface of the Pools, save where a trout here and there rose to the surface or darted out from the shallows, and in the distance the deep note of water rushing down the hill-side fell pleasantly on the ear, while all around us watchful ptarmigan kept up a guttural croaking. In the uncertain light Cairntoul (4,241 feet) presented a very fine sight, with mist wreathing its lower slopes, and the summit standing out sharply against the night sky, and as we descended alongside the Dee the Garbhchoire came into view, swathed in a thin, filmy mist. On Braeriach the mist extended to within 100 feet of the summit, but Ben Muich Dhui was now quite clear, and a star of considerable brilliance just topped the ridge to the north-east with startling effect. It was now close on eleven,

and the darkness intense, so that progress was necessarily very slow. Near the Corrour bothy we walked into a dense mist, which extended right down to the river's edge, so we determined to spend the night on the hill-side—no great hardship with a temperature of well over 60 degrees, and not a breath of wind. About 6.30 we rose, to find the sun flooding the glen, and Cairntoul clear of mist to the base. On the Devil's Point (3,303 feet) and Cairn a' Mhaim wisps of mist still clung to the hill-sides, but soon they too were dispersed by the power of the sun. To the south and east, however, the fog could be seen lying close and thick over the countryside, but here, in this wild glen, the weather was perfect, the scent of the heather and the delightful freshness of the morning air having a most pleasing and exhilarating effect.

On Ben Muich Dhui the large snowfield which had been piled up during the winter months in the southern corrie had now dwindled until it was little more than a speck on the hill-side, and we imagined that a fortnight of fine weather would see it disappear altogether. On Braeriach (4,248 feet) several fields of snow still lingered—one at the low altitude of under 3,000 feet—but they were none of them at all extensive, except the well-known field at the western extremity of the Garbhchoire. In climbing to a higher level, to obtain a more extensive view, we put up a hen ptarmigan with her young, and so fearless was the parent bird that she allowed us to approach to within a few yards. In the neighbourhood we flushed several other pairs—apparently barren birds, which had had their eggs or young destroyed by a heavy snowstorm during the last few days of June. In the distance a herd of stags could be made out grazing on the hill-side, and the animals seemed to be in excellent condition, and already almost clear of velvet. One very old stag, without any horns, was grazing by himself on the outskirts of the herd, and we could not but pity his apparent loneliness. When the herd moved off up the hill-side this veteran found it impossible to keep pace with the rest, and followed them with great difficulty, with more than one pause for breath. Crossing a rocky gorge we came upon a ledge of rock where a golden eagle was in the habit of perching for hours and scanning the corrie beneath. Feathers of all sizes were lying

on the ledge, and the smallest ones were scarcely half an inch long, coming, probably, from the neck of the king of birds. Castings were also there in plenty, and one of these contained, amongst other things, the bill of a ptarmigan and a piece of egg-shell, besides numerous bones and feathers of various kinds.

As we rounded the shoulder of Cairn a' Mhaim a very fine view of Glen Geusachan was obtained, with Monadh Mor in the background. Monadh Mor, for its height (3,651 feet), carries perhaps more snow than any other of the Cairngorms. To its west is an extensive plateau sloping towards the Feshie, and, blown by a westerly gale, the snow is whirled across this plateau, and forms in an immense field on the east slopes of the hill.

An old stalker once told me that while engaged in a deer drive on this hill he came across a Cairngorm of extraordinary size, but as he was in a great hurry—for his late Majesty King Edward was one of the guns—he had no time to break it off the rock. He imagined he would be able to find the spot again, but though, he informed me, he had looked for many years, he had never been able to rediscover the spot. He was of opinion that the burn near which he saw the stone had altered its course, and so the rock had been covered over with sand. To-day as we looked up the Geusachan to Monadh Mor, the snow wreaths were glistening in the clear sunlight, and the precipice on Ben Bhrotain was specially clear. During the latter part of our walk Lochnagar and, farther east, Mount Keen were conspicuous objects, until at Derry Lodge the valley shut out the view. A short distance below the lodge we had the pleasure of seeing a lordly peregrine falcon soaring over some lofty firs in Glen Derry, while a little farther on a red-breasted merganser with her brood splashed heavily down the burn, the youngsters progressing at a great speed by using their half-formed wings as paddles. As Braemar was reached the weather was changing—a dark leaden haze spreading over the sky from the south—and before many hours had passed the tops were shrouded in mist, and a steady, persistent rain commenced to fall.

CHAPTER VI

BEN MUICH DHUI AND LOCH AVON

FOR long Ben Muich Dhui—(according to some "The Hill of the Black Sow," but more recently "MacDuff's Hill")—4,296 feet above sea level—was supposed to be the highest mountain in Great Britain, but now Ben Nevis (4,406 feet) has been given the place of honour. In late August, when the grass and blaeberry plants covering their slopes are still at their best, the high hills have always a great charm, and the few wreaths of the previous winter's snow add a freshness to the hill-sides. Leaving Braemar early in the morning, we have a delightful drive up Glen Lui, but tyre troubles bring our car to a standstill, and a good deal of valuable time is lost. In the glen we pass a very old tramp, whom we take to be a Russian, and who informs us with pride that he has come through the Larig from Aviemore, and a little farther on we meet two kilted stalkers on their way down to Braemar. Although the barometer is high and rising, the morning is none too promising away to the west. On the Cairngorms the mist is rising and falling, and as we near the Derry we see Monadh Mor, with its snow-filled corrie, dimly through the haze, but as we walk up Glen Derry the weather improves, and the sun shines strongly. All the burns are exceptionally low, but in spite of the long continued drought the hill-sides are wonderfully green, and the deer are seen grazing contentedly, or else moving about on the skyline. For some time we have a very fine view of Ben Mheadhoin (The Middle Hill) with the early morning mist resting on its slopes, and the rocks on the summit rising above the cloud. The heather on the low grounds is in full bloom, and the scent is delicious, but as we reach the entrance to Corrie Etchachan it is not yet in blossom.

BEN MUICH DHUI AND LOCH AVON

Up to this point we have followed the Larig an Laoigh (The Calves Pass), which crosses to Abernethy, in the sister valley of the Spey, but now we turn westward and pass up Corrie Etchachan, keeping near the burn, which is a continuance of the Derry water, but is marked on the map as the Etchachan burn. On the slopes of Derry Cairngorm (3,800 feet) we note a couple of snowdrifts not much above the 3,000 feet level, which at the beginning of the season must have been of very great depth. At the head of Corrie Etchachan is a favourite haunt of the ptarmigan, and they are almost certain to be found here at every season of the year. The golden eagle, too, is often seen in the corrie, and I have watched a pair playing with each other above the summit of Ben Mheadhoin. Loch Etchachan, lying at a height of 3,100 feet above the sea, is the highest loch of any importance in Great Britain. Concerning the derivation of the word there seems to be a great deal of uncertainty, but some hold that it is a corruption of Aitaonach—"abounding in juniper"—and as there are a good many bushes of this shrub in the vicinity, this may be correct. As we reach the top of the corrie we have a magnificent view of the loch, deep blue in the morning sun, with Ben Muich Dhui in the background. The hill as yet carries a good deal of snow, and one drift in a corrie immediately east of the summit very rarely disappears. The corrie is known as the Snowy Corrie, and on one occasion, as late as September 23, we found the drift about 30 feet deep; to-day, so far as we can measure, it is at least 60 feet in depth.

Instead of following the path straight to the summit we turn north, and make for the Shelter Stone and Loch Avon. Before us we have Cairngorm (4,084 feet), with the morning's mist as yet enveloping the summit, and at times Ben Muich Dhui is mist-capped also. In spite of the drought we notice one burn which is much larger than usual, and is overflowing its banks, from what cause is doubtful. All at once we reach the edge of the plateau, and look down on Loch Avon (2,600 feet above sea level). This loch lies in a deep gully, being bounded to the north by Cairngorm, west by Ben Muich Dhui, and south by Ben Mheadhoin. It is over a mile in length, and exceedingly deep, while

trout in hundreds may often be seen rising on it during fine weather. From it issues the Water of Avon, which enters the Spey at Ballindalloch. Leaving the plateau overlooking the loch, we descend to the Shelter Stone, where many mountaineers spend the night before scaling Ben Muich Dhui, but from its appearance we are of opinion that a bed on the open hill-side would be far preferable. We reach the Feith Bhuidhe (as the Avon is called before it enters Loch Avon) a little way west of the loch, and from here strike up the steep hill-side to the summit of Ben Muich Dhui, following the burn all the way. All around the loch blue-bells are met with in great profusion, and we do not remember ever having seen the flowers of so large a size.

The day is now intensely hot, with only a slight breeze from the west, so we make some tea about half-way up the Feith Bhuidhe, and afterwards push on refreshed. We soon reach the snow, which has been drifted along the plateau during the winter storms, and has lodged amongst the rocks looking down to Loch Avon. At one point we come upon the remains of an avalanche, a day or two old, and huge blocks of snow, some over six feet high, lie scattered about the hill-side, looking as though they had been cut with some gigantic spade. In places the snow has carried down pieces of the rocks, and here we find a small Cairngorm stone. The great heat of the sun is having its effect on the snow, which is quickly melting, and streams of water are issuing from the drifts. Where the snow has melted only a few days before, grasses and mosses are commencing to grow, and the ferns are beautifully green a little way off. Here we come upon a hen ptarmigan which is most confiding, and we see her brood of well-grown youngsters sunning themselves a few yards away. Some are half-asleep on stones, others are walking lazily about, but they pay little attention to us. The plateau reached, we find the summit still some distance away, and the walking, too, is very bad at this point, but we keep close to the burn, and leave it only a few hundred yards from where it rises, within a very short distance of the eastern source of the Dee. Bird life is scarce at this height, but we see a few meadow pipits, and a solitary peregrine flies past, making towards Braeriach.

The summit cairn of Ben Muich Dhui is reached about 3.30 P.M., and although the day is very fine we have no distant view owing to the haze. Aviemore is made out, however, and westward Braeriach and Cairntoul across the valley of the Dee. The Garbhchoire burn is seen threading its way down from Braeriach like a line of silver, and we also note the Devil's Point (3,303 feet), and the Angel's Peak on Cairn Toul, so named, it is said, to keep the demon in his place. After leaving the summit we have some *glissading* in the Snowy Corrie, and a little farther hear the call-note of the snow bunting and flush a covey of ptarmigan. As we descend Corrie Etchachan the sun is sinking behind Ben Muich Dhui, and the deer are returning to the low grounds for the night, while the few grouse which the golden eagle has left are calling loudly in the evening calm. As we reach the Derry darkness is fast coming on, and the last glow of the sunset is sinking behind Ben Bhrotain and Monadh Mor to the west.

CHAPTER VII

THE RED GROUSE

THE red grouse (*Lagopus Scoticus*) has a special interest from the ornithologist's point of view, because of the fact that it is the only bird we have which is peculiarly indigenous to these islands, and is met with nowhere else, so far as is known. It is towards the end of January, if the season be mild and open, that the grouse begin to pair, and on a still, sunny day the cock birds may be seen going through all kinds of antics in their endeavour to win the affections of the sedate hen birds. Often—in fact, almost always—after the birds have paired winter returns to the uplands, and under the severe weather conditions the birds regather into large packs, but whether they remain paired is difficult to say. At all events, on the advent of spring proper the birds break up into pairs once more, and commence to look about for a suitable nesting site. The earlier nesting birds on the more sheltered moors commence to build during the first week in April, but the usual nesting season is May, or even June on the high grounds.

The nest is a shallow hollow scraped on the ground among long heather or ling, and is very rudimentary in appearance, being sometimes scantily lined with grass and heather, with a few feathers from the breast of the hen bird. The eggs are from seven to twelve in number, one being laid each day till the clutch is completed. The hen does not commence to brood until there are four or five eggs in the nest, and usually covers her eggs with heather and grass when she leaves them. Incubation lasts about seventeen days, and during this time the cock bird mounts guard in the vicinity, and gives warning of the approach of danger. The eggs are very beautiful, and are coloured in such a way as to harmonise in a remarkable manner with their surroundings, being of an olive ground

colour, and liberally blotched with dark reddish-brown markings. I have more than once seen a grouse's nest built in a clump of rushes, where the hen bird sat well concealed from view.

It is remarkable how a brooding grouse will sit through a storm of snow, especially if her nest be on an exposed ridge, where the snow is drifted past her. A few years ago we had an exceptionally severe fall of snow during the last few days of May, which destroyed a great many nests of those birds which were breeding on the high grounds. There was an average depth of nearly a foot of snow above 2,000 feet, and the drifts were many feet deep. This notwithstanding, some of the grouse nesting on the windward side of the hills continued to sit through the storm—although their eggs were completely bleached by the wet—and hatched their broods in safety. I remember flushing one bird after the storm, so weak from cold and exposure that she was scarcely able to fly from her nest. Grouse sit very closely, and if they consider themselves well concealed will remain on their eggs until actually trodden upon by the unsuspecting intruder. It is a matter of some difficulty to obtain a photograph of a hen grouse on her nest, owing to the fact that the latter is generally in such a position as to render the brooding bird almost invisible as she crouches low amongst the sheltering heather, and when the nests are placed on exposed hill-sides the parent birds will not, as a rule, permit of a near approach.

The range of the red grouse is an extensive one, and altitude seems to make little difference to them. There is one healthy grouse moor that I know of situated only a few hundred yards from the North Sea, and on this moor the nesting grouse have as their companions sheldrake, eider duck, and a colony of quite 10,000 pairs of common terns, not to mention black-headed gulls, ringed plover, dunlin, and a host of shore-nesting birds. The terns are always very zealous of the privacy of their nesting site so far as strange bird life is concerned, and it is amusing to see the colony swoop down upon an inoffensive grouse and drive it from the vicinity in a state of great alarm. Up to 2,500 feet grouse are plentiful, but the highest level at which I have ever seen a nest was just under 3,000 feet above the sea, and on the

summits of our highest mountains the birds are never found. The highest nesting grouse share the hill-side with the ptarmigan (*Lagopus mutus*), and the birds occasionally interbreed. I once flushed a bird which appeared to be a cross between a grouse and a ptarmigan, but, considering how often the two species breed side by side, "crosses" are remarkably rare. The two greatest enemies of the grouse are generally considered to be the golden eagle and the peregrine falcon, but, personally, I do not think much damage is done to a grouse moor by either of these birds. There is one hill —which I know intimately—on which a pair of peregrines annually make their nest, and attempt—invariably without success—to rear their young. Notwithstanding the presence of the peregrines, the moor swarms with grouse, and the usual birds to be found at the peregrines' eyrie are green plover, which the falcons capture in a bog in the valley below.

The golden eagle, while undoubtedly taking a certain number of grouse, makes no appreciable difference to the shooting on a moor, as the eagles capture the old and diseased birds in preference to those in good condition. An eagle has more difficulty in taking a grouse than is generally supposed, and he often misses his prey when he swoops down upon it. For this reason he seems to prefer mountain hares to grouse, as the former are more easy to capture. A hare, when pursued by an eagle, is in a very tight corner, and her only chance of escape is to hide under some rock, or in the burrow of a rabbit. A keeper once saw an eagle in hot pursuit of a hare, which ultimately gained the protection of an overhanging stone. The eagle now seemed at a loss for a plan of action, and walked round and stood on the top of the stone, in the hope that the hare would leave her shelter. This she very naturally refused to do, and after waiting for some time the eagle sailed away in disgust. I have seen a grouse inadvertently alight almost on the top of an eagle which was going to roost on a heather-clad hill-side. The eagle, thus rudely disturbed, flew up and swooped at the grouse, but missed his aim and struck heavily against the ground. He thereupon flew off, and soared to a great height, being soon joined by his mate, when they both disappeared over the hill-top.

THE HAUNT OF THE WHITE GROUSE

HALF-GROWN RED GROUSE CROUCHING

The earliest nesting grouse hatch out their chicks early in May, and by mid-June most of the birds have young. As late as August 3, however, I flushed a grouse with her brood, the latter being scarce able to take wing, and the watcher near whose bothy that particular grouse nests every season stated that she usually was sitting on eggs as late as the first week of July. When a hen grouse with small young is disturbed she shows signs of great excitement and anxiety, and often flies right up to the intruder, uttering a curious hissing noise. Then she flutters on ahead of him, trailing her wings as though useless, in the hope of enticing him away from her chicks. If the day be cold the mother bird broods her young and sits on them very closely, but in warm weather the chicks wander a considerable distance from the parent bird. At night the hen grouse leads her young to a patch of short heather, where they are less likely to be surprised by a fox or other enemy, and covers the chicks, while the cock bird sleeps a few yards away from her. The young grouse are able to run about a few minutes after leaving the eggs, and sometimes one comes across chicks to which pieces of eggshell are still adhering—a no uncertain testimony as to their extreme youth.

I once found a grouse's nest from which the young had just been hatched, and, as my camera was a few hundred yards away, I left a handkerchief to mark the position of the young birds and went back to fetch it. On my return I could find no trace of the chicks, and ultimately I came upon them nearly 100 feet away—a good instance of their extraordinary activity when newly hatched. By mid-July, if the season is a favourable one, the young grouse are strong on the wing, though as yet much smaller than the parent birds, and young and old keep together till well into the autumn, when the birds form into large packs, remaining in this state until the call of spring once more turns their thoughts to domestic cares and responsibilities.

echoes through the glen. During the darkest nights of autumn —nights when the mist hangs low on the hill and when the glen is black as ink—the tramp of the stags sounds strangely clear and startling, and one conjures up visions of phantom stags treading, in the spirit, their beloved corries once again.

It is perhaps in autumn that the romance and poetry of the shieling are most apparent. We well remember, one October day, sighting the bothy from the mountain to the north. Here Arctic conditions prevailed, with driven snow sweeping over the exposed plateau, but in the glen all was quiet and still, and the blue smoke curling up in the evening air was a welcome sight to us after a long day on the hill. Our way to the shieling led down a steep corrie, where ptarmigan in their hundreds were sheltering, and where the roar of a hill stag from time to time fell on the ear; and as we reached the depths of the glen and wandered by the swiftly flowing burn, it was brought home to us that in the peace and solitude of the hills was that happiness which awakens all that is noblest and best in the lover of the lone places.

On clear, frosty days, when the hills are snow-capped, but when winter has not as yet penetrated to the glen below, the view from the shieling towards sunset is of unsurpassed beauty. Gradually the mountain to the north changes in colour from dazzling white to the softest pink, reflecting on its snowy expanse the last rays of the sinking sun. And then, with almost startling rapidity, the hill is again transformed. The rosy tints disappear, and in the twilight the mountain top assumes a blue-green colour—a colour from which the soft beauties of sunset have entirely disappeared, and which presents a certain cold, impassionate grandeur, without pity and yet magnificent in its sternness.

At times, in clear, frosty weather, the whole of the glen is transformed, after dark, by the bright streamers of the Northern Lights. As a rule, the electrical disturbance is confined to the northern skies, but at times the aurora extends from north to south and from east to west, lighting up hill and glen with its cold beams, and rivalling the moon herself in the strength of its rays. To the east of the shieling a hill rises abruptly. Towards its base it is covered with long, thick heather, but nearer the summit a belt of dark granite cliffs

encircles the hill, and on wild nights the rushing of the westerly gale, as it strikes angrily against the barrier in its path, is often borne to us against the wind, as the booming of breakers on the shore of the ocean.

On certain nights the rising moon is intercepted by the hill, and it is not until she has mounted high in the heavens that she asserts herself and floods the shieling with her light. For a while before she tops the hill her rays are seen to shoot high into the sky; gradually the outline of the mountain becomes more and more distinct as the sky to the eastward grows in brightness until the moon herself peeps above the crest with almost startling abruptness. We remember, one glorious frosty night of late autumn, hearing curious barking cries proceeding from the rocks high above us. The calls were quite unlike anything we had ever before listened to, and at first we imagined that some poor wounded stag was groaning in pain. But as we approached nearer we recognised in these strange, hoarse barkings the cry of the grey crow, rendered wild and unnatural by the many echoings from the rocks above. In the stillness of the night the calls rang out curiously ghostly and unreal, and to the Highlander of old would have seemed as the broodings of a lost soul as it wandered over the mountain side.

From the door of the shieling we one day marked, through the glass, what seemed to be the motionless form of an eagle perched on a rock on the sky-line opposite. Hour after hour the eagle—for we had little doubt as to its identity —stood motionless; but when again we scanned the hill some days later we found the supposed eagle to be merely a rock which certainly bore a very striking resemblance to the king of birds. Often we sweep the hill-side to gaze upon the phantom eagle. In fine weather, when the whole hill is brilliantly lit up in the strong light of the sun, he occupies his perch; when the rains of autumn dash upon the hill face and the wind blows with hurricane force, this bird of stone faces the storm unmoved; and it is only when the spirit of the snows has covered hill and glen deeply in her white mantle that the eagle is lost to view, until the soft south wind breathes once more on the hill slope and frost and snow beat a retreat.

One evening, as we watched from the bothy door, it seemed to us as though two figures were at work in the peat moss opposite. One figure appeared to be seated in the heather, while the other, in his shirt-sleeves, was standing surveying his labours. We drew the attention of the stalker to the figures; but a closer inspection through the glass revealed them, too, to be unrealities, though the resemblance to human beings was particularly striking. Often when the north winds of autumn bring showers of sleet sweeping through the glen we look across to the two motionless forms braving fine weather and foul without complaint, and ever engaged in their self-imposed and unending task.

On one occasion, when we were at the shieling on a July afternoon of sunshine following a morning of storm and thunder, we were somewhat surprised to see, making for the shieling, but at a considerable distance from the path, two figures wrapped in long military cloaks and bearing heavy haversacks on their backs. Attracted by the pipe music the two strangers advanced until they were some fifty yards distant from us, when, with one accord, they removed their Tyrolese hats and, bowing repeatedly, approached the shieling door. From their somewhat disjointed speech we gathered that they were Germans who were making a tour of Scotland, and who were now on their way to an east coast port. To every remark which we put to them their reply was "Delighted"—a reply which caused the stolid stalker to look at them with no small surprise after a singularly inappropriate expression of pleasure on their part. The lingering snow-fields on the hill across the glen were a source of considerable surprise to the strangers. They were astonished, they said, to see water in such a curious position, and on being informed that what they saw was the remains of the winter snow, they were quite incredulous. The bagpipes were objects of great interest, as also was the sporran which the writer was wearing. After partaking of tea, and after the making of a short speech, in which they stated that they were "staggered by the hospitality of the Highlander," the two voyagers resumed their journey, being escorted to the track by the stalker, who throughout was courteous in the extreme.

It was towards the close of a beautiful July day some

years ago that the shieling and its inmate had a very narrow escape. Gradually black thunder clouds formed over the glen, shutting out the rays of the setting sun, which, however, still shone clearly a few miles to the northward. The evening air was close and heavily charged with electricity. Not a breath of air stirred down in the corrie, and the calling of the birds was stilled. Suddenly, with the noise of thunder, a cloud-burst crashed on the summit of the hill opposite the shieling, and down the hill-side a surging mass of water rushed with lightning speed, scouring a deep hollow and carrying in its mad course boulders of great size. On striking the hill-top part of the body of water rebounded into the air and again struck, though with somewhat lesser violence, on the hill face opposite. During this time the old stalker stood at the door of the shieling quite unnerved, and expecting every moment that his humble dwelling would be swept away on the rush of the waters. Fortunately for him the path of the torrent cut its way a few hundred yards to the southward of the point from where he watched, and the shieling was spared.

Bird life at the shieling is somewhat rare. A few—a very few—grouse remain in the glen throughout the year; but as the grouse shooting progresses and many drives take place on the surrounding moors, a certain number of fugitives enter the glen of the shieling, realising, perhaps, that here they are safe from their human enemies, though still at the mercy of the lordly eagle and the cunning fox. In autumn snow buntings twitter in the glen, feeding on the seeds of the mountain grass, and flying restlessly hither and thither over the hill-side. In summer they will nearly all set their faces northward, but a very few remain in the stony corries, where, at the haunts of the eternal snows, they will rear their young amongst granite "scree." A true child of the mountain is the snow-bird. His wild, whistling call-note, the charm of his tinkling song, his choice of the lone plateaux, where even the ptarmigan are out seldom met with, all stamp him as a true lover of the desolate places where he has his home.

Lying as it does in the very heart of the hills, the shieling rarely sees the form of a sea-gull. In all our experience we have only twice known of gulls penetrating to this remote

glen. It was early one glorious July morning that, on going to the door of the bothy, we greatly alarmed a mother black-headed gull with a solitary young one. What had induced the parent bird to bring her offspring to the corrie is difficult to say: probably they were migrating together from the nesting site seawards, and the appearance of the tiny dwelling in the midst of the hills had suggested the possibility of food. At all events, they remained in the vicinity for several days, and on one occasion we observed the parent bird crossing a hill-side close on 4,000 feet above sea level, evidently flying to rejoin her young. On another occasion we had been watching, through the glass, the movements of an eagle which had been clearing the ground of its ptarmigan, apparently for the mere pleasure of the thing. After a while, tiring of this occupation, the king of birds sailed into his eyrie in a rocky hill-side, and did not again show himself. As we watched, a little later on in the afternoon, from the shieling door, a pair of sea-gulls, flying high and steadily, and evidently on migration, passed over us, their course leading them across the hill-side where the eagle had his home. We looked anxiously, expecting every moment to see a dark form shoot out from the rocks and pursue the travellers; but we looked in vain, and the gulls, quite unaware of the proximity of danger, went on their way unharmed.

Though the whereabouts of the eagle's eyrie has been known for many years, the exact nesting site still remains a mystery, for, on account of the giant cliffs, the eyrie remains impregnable both from above and below. Sometimes in the cool of a summer's morning, before the rays of the sun beat fiercely on the hill-side, we have heard borne down to us the yelping cries of the young birds, but the most careful search with the glass has failed to reveal their whereabouts.

In late autumn, when the days are rapidly drawing in, and when even at midday the hills cast a shadow, it is pleasant to be aroused at dawn by the crowing of the cock grouse around the shieling. Sometimes during the night a great outcry arises, and one realises that a fox has been detected by the ever-watchful birds.

Our last visit to the shieling was at a time when winter

THE MOUNTAIN SHIELING

had already set his seal on the hill lands, but when autumn still lingered at the foot of the glen.

As evening drew in the wind backed to south'ard, and swept up the strath in fierce gusts, blowing the smoke back down the chimney and filling the room with a dense peat reek. Rain soon accompanied the wind, and as night wore on the tempest was at its height. Though the moon was at her full, everything without was wrapped in impenetrable gloom, and the rushing of the river was heard only during a lull in the storm. Quite a foot of snow covered the high grounds at the time, and the heavy rain, together with the melting of the snows, brought down the river in spate.

Shortly after midnight the wind again shifted to west, and after a squall of snow the clouds lifted and the full moon, now high in the sky, flooded hill and corrie in her cold light. On the hill-tops she shone on an expanse of unbroken white, but to the glen the snows had not as yet penetrated, and the river, in its winding course, stood out a silver, rippling streak against its sombre background as we left the shieling to sleep its quiet winter sleep, secure in the keeping of the silent hills till summer comes again to the land.

CHAPTER IX

THE LIFE HISTORY OF THE PTARMIGAN

A GLORIOUS June morning on the high hills! Though the day is as yet barely four hours old, the sun is already shedding his clear rays on the eastern slopes of the corrie where our ptarmigan is patiently brooding on her primitive nest, hidden away amongst the fresh young grass and the trailing stems of the cowberry. During the short summer's night the dew has fallen freely, and lies in tiny drops on the ptarmigan's feathers, glistening in the sunlight with each breath drawn by the mother bird. In the valley beneath nestles a diminutive loch, over which a thin grey mist is being continuously formed. The cloud is not permitted to remain, however, for it is gently guided by the westerly breeze down the course of the valley, until it is caught up to the skies by the sun's warm rays. The sitting ptarmigan broods on, patient and contented, for the first part of her duty as a mother is almost completed, and in the course of the next few hours she will lead her newly hatched brood across to where a small spring, clear as crystal, issues from the hill-side and hurries down to the valley beneath. From time to time the ptarmigan listens intently with an expression of deep satisfaction, for she hears that which is most dear to a mother bird—the soft tapping of feeble bills as they slowly, though surely, break a way through their prisons. For close on three weeks has this bird of the mountains brooded on her clutch of eight speckled eggs, which in appearance so resemble those of her relative the red grouse as to be indistinguishable except to an expert.

Not always has the weather been so favourable to her as on this midsummer's morning. At times violent storms from the south have beat on the hill-sides, and have brought with them torrential rains which have threatened to wash the eggs from beneath the mother bird. Again, there have been days when

the north wind has brought with it squalls of blinding snow, which soon covered the high hills with a white mantle, and which threatened every moment to force the ptarmigan to leave her treasures. She succeeded in weathering the storm mainly owing to the fact that her nesting site happened to be on a ridge over which the snow swept in suffocating clouds, but, finding no resting-place, was hurried on to more sheltered parts of the hill-side. During one of these early June storms a great many of the ptarmigan's friends who had chosen less exposed nesting sites than the subject of this story were forced to leave their eggs in order to avoid being buried alive in the snow, and in the course of a walk over the high mountain plateaux we constantly came across the deserted nests of the mountain grouse. The eggs in every case had been sucked by grey crows or common gulls—both deadly enemies of the ptarmigan during the nesting season—and the bereaved parents had in several instances already conquered their grief, and were busily engaged in constructing new nests for the reception of fresh clutches of eggs. One ptarmigan, wiser than the rest, had chosen for a nesting site the shelter of an overhanging rock, and had thus escaped the storm. As the neighbourhood was infested with common gulls, which were doing an immense amount of damage to the ptarmigan's eggs, we imagine that this particular bird had chosen her unusual nesting site more with the idea of evading her enemies than of sheltering herself from the storms during the period of incubation.

The ptarmigan shows a marked absence of fear during the nesting season. Whether this can be accounted for by the fact that human intruders rarely penetrate to their nesting sites is doubtful. It may be that they rely rather on their protective resemblance to their surroundings than on their powers of flight, being accustomed to avoid the keen glance of the eagle by crouching quietly amongst the rocks and lichens. The protective coloration of the ptarmigan is extremely necessary to them, for at their haunts there is an almost complete absence of natural cover, and, indeed, where such cover is present the white grouse rarely avail themselves of it. To illustrate the confiding nature of the mountain grouse, it may be of interest to recall an experience which we had with one of these birds a short time ago. About eight o'clock on a

June evening we came across a mother ptarmigan brooding on her nest on a south-lying hill slope some 3,300 feet above the level of the sea. The bird was a very confiding one, and we were anxious to obtain some photographs of her on the nest, but owing to the lateness of the hour instantaneous photography was out of the question. Working as noiselessly as possible, we gradually constructed a cairn of stones within four feet of the sitting bird, and, having erected our camera on this improvised stand, succeeded in taking several pictures of the ptarmigan without causing her to leave the nest! Again, a Highland stalker informed us that he on one occasion removed an egg from under a sitting ptarmigan without disturbing the bird, and we lately heard a story of a stalker who discovered, after lunching on the hill-side, that he had been sitting on a stone immediately above the spot where a ptarmigan had been covering her eggs, and that he had actually been dropping crumbs on to the back of the brooding bird!

It was early in the spring that our ptarmigan was wooed. While the high hills were still buried deep under their snowy covering, and while the mountain burns were quiet beneath their heavy coating of snow and ice, a certain cock bird, resplendent in his winter plumage, had fought many battles on her account. As yet, however, thoughts of rearing a family were out of the question, and it was not until the advent of May that the birds commenced to search for a suitable nesting haunt. Even then there was little ground on the high hills free of snow, and May was a full fortnight old when the pair chose for a nesting site a sunny bank, distant only a few yards from a deep, snow-covered gorge. For a ptarmigan's nesting site the altitude was not great—some 3,300 feet above the level of the sea—but the situation was an exposed one, and the mother bird had little to shelter her from the full force of the storms from the north and south. The construction of the nest occupied only a short time, for their home was a very primitive one, being merely a hollow scraped amongst the heath and blaeberries, and lined carelessly with a few blades of grass and mountain lichens. A few weeks before, the parent birds had commenced to lose their snowy winter plumage, the white feathers being gradually replaced by those of grey-brown tints, until the wings alone retained the colour of

the snows. On May 20 the first egg was deposited in the nest, and until the 27th of the month the hen ptarmigan visited her treasures by stealth at every dawn, depositing on each of these visits an additional egg beside its fellows. On these occasions she was always most careful to take precautions lest she were observed by any of her enemies—the marauding stoat, the cunning crow, the quiet-flying gull—but she was fortunate enough to keep her secret secure, and on leaving the nest she invariably covered her treasures with grass and lichens from the hill-side near by. On the morning of May 27 the ptarmigan's freedom was at an end. On this morning she, as usual, crept to the nest with the coming of the dawn. The cock bird was with her, and while he took up his watch on a prominent stone hard by, his wife slipped on to the nest, and with supreme content settled herself on her eggs, commencing her first period of self-denial as a mother. And so day succeeded day on the high hills, and nothing occurred to mar the happiness of the mountain birds. Superb weather prevailed, and the sun shone from a sky of unclouded blue, heating up the immense hill slopes, and forcing the mother ptarmigan to slip off her nest from time to time in order to cool herself on the snow-field a few yards away. There were, it is true, moments of anxiety for the pair—when the grey crow and his mate crossed the sky line and flew slowly over the hill, on the keen lookout for such a dainty morsel as a ptarmigan's egg, and when a common gull, sailing up from the loch below, seemed as though he could not fail to mark the sitting ptarmigan beneath him. But the mother bird crouched low on her nest, scarce daring to breathe, and her wonderful harmonisation with her surroundings misled even the keen eyes of these experts in egg-stealing.

One morning the ptarmigan saw, in the sky far above them, a dark speck sailing in circles on motionless wings. Terror filled the hearts of the mountain grouse, for they realised at once that the dreaded golden eagle was above them, and that he was scanning with proud and pitiless eye the hill-side far below him. Gradually the king of birds descended earthwards, and all of a sudden, closing his wings, shot down with terrific speed. This he did purposely, well knowing that the ptarmigan would be unable to stand their ground, and

would rise in a body from the hill-side. Our ptarmigan, however, did not rise with the rest, and well was it for them that they remained crouching motionless on the ground. From every side terrified birds rose, and, croaking loudly, flew hither and thither quite aimlessly. The eagle watched grimly awhile, then suddenly pursued one of the fugitives, overtaking it in a few seconds, but swerving aside abruptly when it seemed as though he would strike down the flying bird. Then, glorying in his strength, he made off in hot pursuit of another victim, enjoying what was to him excellent sport. The latter ptarmigan was not so fortunate as its predecessor. Its most frantic efforts at escape appeared pathetically useless against the eagle's powerful flight, and it was soon overhauled and struck down by the mountain king. And then, as our two ptarmigan watched anxiously, the eagle, sailing to an immense height, dropped his now lifeless prey, and, as it fell earthwards, closed his great wings and shot with terrific speed after the mountain grouse. He regained his prize a few yards from the surface of the hill-side, and, soaring upwards once more, repeated the performance several times, evidently enjoying to the full his rushes earthwards. At length, however, he took his departure over the brow of the hill, and, one by one, the affrighted ptarmigan returned to their haunts, croaking to each other as they reached their nesting quarters, and showing signs of great uneasiness for some time. A few days before the hatching of the eggs an event occurred to cause considerable anxiety to our sitting bird. A roaming ornithologist, in search of fresh subjects for his camera, was seen to approach in a straight line for the brooding ptarmigan. As a matter of fact, he was quite unaware of her proximity, and it was not until he had reached a point some six feet from his crouching "sitter" that he suddenly stopped, and, with feverish haste, erected his camera and crept cautiously forward. The ptarmigan for some time remained motionless as a statue, but at length her nerve failed her and she hurried from the nest, feigning a broken wing. Instantly the cock left the knoll where he had been a silent witness of the proceedings, and flew down to his mate. Emboldened by the presence of her husband, the hen bird now returned, and both parents waited anxiously a short distance from the nest to watch the course of

THE HOME OF THE PTARMIGAN IN MID-APRIL

THE AUTHOR AND HIS TENT, IN JUNE, AT THE HAUNT OF THE PTARMIGAN

events. Fortunately the photographer was content with several pictures of the nest, which he left unharmed, and went on his way, after admiring the beautiful snow-white feathers which lined the nesting hollow, and the richly coloured eggs lying therein.

At length, on a beautiful summer's morning, the hen bird knew the happiness of motherhood. One by one the tiny chicks emerged from the shell, until the ptarmigan was covering eight downy children under her warm feathers. Her young, more fortunate than those of many other birds, were ushered into the world with open eyes and little feet already prepared for walking, and so, a few hours after the hatching of her brood, the mother bird was leading them across the hill to where the clear spring issued from the ground. Favoured with fine weather, the chicks grew rapidly, and by the time they had reached the size of larks were quite strong on the wing, and able to accompany their mother in her shorter flights. One day a marauding stoat surprised the happy family, and before the excited parent had realised the true state of affairs had captured one of the fledglings and had borne it into a hole in the rocks. On another occasion one of the family, while traversing some rocky ground, disappeared into a deep hole between two stones, and although the parent bird called anxiously for it, and remained in the neighbourhood for some time, the chick was never again seen. Another exciting incident was when a herd of stags, suddenly alarmed by the appearance of a mountaineer, galloped madly down the hill face, making straight for where our ptarmigan was resting with her young. At their approach the mother bird fluttered forward in front of the advancing stags, feigning injury, and hoping, apparently, to entice them from the whereabouts of her brood. Her somewhat pathetic confidence in her powers as a decoy was, very naturally, unjustified, and the herd passed right over the spot where her family were crouching on the ground, but, strange to relate, not a single one of her brood was injured, and the next half-hour was marked by happy congratulations between the mother and her family.

And now as July slipped into August, and the air of nights was chill, while the grasses and mosses of the high grounds were gradually losing their fresh verdure, the young ptarmigan

could be distinguished only with difficulty from the parent birds. Even the white feathers of the wings served to heighten the resemblance, but the youngsters could still be identified by the shorter length of the tail, and the somewhat clumsy way in which they took flight, swaying from side to side like a rudderless ship as they shot across the hill-side. It was about this time that the various ptarmigan families in the neighbourhood collected into one great flock of many hundreds of birds, and began to cover a wider range of ground than they had done during the nesting season. And as summer gradually merged into autumn the mountain grouse slowly lost their subdued plumage of the summer months, and clad themselves in a dress rivalling the snow in its whiteness. So that when winter descended on the hills, and when the blinding drift swept over the mountains and wild plateaux, the children of the hills were not unprepared for its coming, and even revelled in the snowy wastes, realising that in their plumage of white they were all but secure from their enemies, the mountain eagle and the stealthy, prowling fox. Happy in this knowledge, they lead their quiet, uneventful life till the breath of the south wind once again comes to the hills, and even on the highest grounds frost and snow disappear for another season, lingering only in the highest corries, which, protected from the sun and soft breezes from the south, retain their snowy covering from one year's end to another.

CHAPTER X

AUTUMN ON THE HIGH HILLS

THERE is a peculiar grandeur in the Cairngorm mountains at every season of the year; in winter, when their summits and corries are buried deep under glistening snow, and when the ptarmigan in their spotless plumage seem almost to rival the snowy wastes in their brilliant colouring; in spring, when the summits are free of snow, but when huge fields still lie in the corries; in summer, when the mountains are green to their summits, and when the cushion pink and the Alpine azalea cover the plateaux a beautiful red; but at no season of the year are these giant hills seen to greater advantage than on a fine October day, a day such as we were fortunate enough to choose for an expedition over Ben Muich Dhui, 4,296 feet above sea level, and Britain's second highest mountain. As we made our way through the Larig on this October morning it was hard indeed to realise that autumn was wellnigh half gone. The evening before had been remarkable for a very fine display of Aurora, which had lit up the glen with wild effect; and now the morning was soft and calm, with a wonderful sky, in which mackerel clouds predominated. Before we had gained the Corrour Bothy, at the base of crater-shaped Cairntoul, the sun had pierced through the clouds, and never have we seen the Larig appear more beautiful. Ben Muich Dhui was as yet in shadow, but the sky behind it was of a wonderful azure blue, and on Cairntoul and Braeriach the sun shone with great brilliance, showing off the giant corries to perfection and the waters of the infant Dee, where it fell, sparkling in the sunlight, from the heights of Braeriach to the comparative gloom of the deep Garbhchoire.

On crossing the Dee opposite the bothy we were interested to see a fair-sized salmon dart out from the shallows, and

endeavour to conceal itself under a rock in mid-stream. Salmon not infrequently ascend the river to the so-called Fish Pool, rather more than a mile below the bothy, but it is comparatively rare to see them above this point, as between here and the bothy a succession of small falls renders it difficult for them to push up farther. After a short halt at the bothy, we resumed our journey, making for the Pools of Dee at the head of the Larig. Soon we had a view of a golden eagle—a mere speck in the sky—just as he was disappearing behind the summit of Braeriach; and a few moments later another eagle gave us a splendid sight of him as, with the sun full on him, he soared in spirals over Ben Muich Dhui, gradually rising to a great height, and appearing almost level with the summit. At this point he was joined by his mate, and the two soared round and round each other until they had actually risen into the clouds, and could only be made out with difficulty. They were occasioning great alarm among the birds in the neighbourhood—a pair of grouse in their excitement flew almost into us, and higher up the hill-side flocks of ptarmigan were flying south at express speed. At the extreme end of the Garbhchoire, in a hollow known as the Fuar Garbhchoire (the cold rough corrie), we could see the remains of the immense snowfield which has never, so far as is known, completely disappeared even during the hottest summer. Near the Pools of Dee we heard the roaring of the deer almost continuously, and numbers of stags, with their attendant hinds, could be seen on both sides of the glen.

The climb up the plateau of Ben Muich Dhui was extremely stiff going in the intense heat, but we noted, although it as yet wanted an hour to midday, that the sun had already disappeared behind the rocks of Braeriach, leaving the snow in deep shadow. The waters of the Dee in the Larig, far beneath us, were glistening in the sunlight, and the watcher's bothy by the Corrour burn was very distinct. The watcher himself we saw for a moment as he walked round to the back of the bothy to fetch some wood. On the plateau of Ben Muich Dhui we found many plants of the mountain willow (*Salix herbacea*), the leaves of which had, in most cases, turned to their autumn tints, but were wonderfully vigorous, considering that some three weeks previously Ben Muich Dhui

had been deep in snow for several days—in fact, a drift remained for close on a week in its southern corrie. Plants of the cushion pink were common. The latter, though delicate in appearance, are well suited to withstand the storms at this high altitude, and are moored to the loose, gravelly soil by long and formidable roots. Looking across the Larig, Cairntoul was beautifully clear in the strong sunlight, and we could see the corrie where, nestling between Cairntoul and Sgor an Lochan Uaine, the dark and deep Lochan Uaine (the green lochan) lies hidden from the sun except during the longest days of midsummer. Before October is out ice often covers its surface, and the lochan is hidden under this wintry mantle until long after the soft southerly winds have cleared the snow from off the hill-tops. On the present occasion no snow lingered on Braeriach, except in its Snowy Corrie; while Cairntoul, with its crater-shaped corrie, has rarely snow after the month of July—in this respect being the only one of the Cairngorms to lose its snowfields before the summer is out.

From the summit cairn of Ben Muich Dhui the view was extremely grand; westwards, across the Garbhchoire, the giant bulk of Ben Nevis stood out with marvellous clearness. On its slope light, fleecy clouds were resting, continually changing the aspect of the mountain; but the summit remained wonderfully clear, and we imagined that we were able, through the glass, to distinguish the observatory or the summit hotel. The Glen Coe mountains were also clearly outlined, and Ben Alder, in the foreground, although close on thirty miles distant, was a very conspicuous object. Farther south, Shiehallion and Beinn a' Ghlo (the hill of the mist) were prominent, while over Glas Moal and the Glen Shee hills the sky was quite cloudless. Though the summits of all the mountains were so clear, the lower slopes were enveloped in a thin haze, and we afterwards learned that down in the valleys a heavy hoar-frost had been experienced that morning. Lochnagar, to the south-east, was, of course, conspicuous, and down in the valley of the Spey, Ben Rinnes, with dark rocks on the summit, was a well-known landmark. To the north, however, the view was obscured by a very thick haze. On Aviemore the sun was shining with great brilliance,

but beyond all was dim, and Ben Wyvis and the Moray Firth were quite invisible. Here on the summit plateau, 4,300 feet above sea level, the temperature was close on 65 degrees in the shade, what wind there was blowing very soft out of the south-west; and with the sun shining from a sky of azure blue, it was quite impossible to realise the true season of the year.

We had been on Ben Muich Dhui at all seasons, but never before had we been favoured with such truly magnificent weather conditions. The sky to the west was covered with the most wonderful clouds; a few heavy cumuli here and there, but for the most part soft mackerel clouds predominated, and the sky between them was of an exquisite blue. On crossing over the ridge we found in the Snowy Corrie the remains of the extensive snowfield from which the corrie takes its name. It had dwindled greatly, however, and was not visible until we were close upon it. Following the Garbh Uisge—one of the sources of the Avon—we came upon three more snowfields, the lowest being just above Loch Etchachan. The presence of so much snow on the east of Ben Muich Dhui after a warm summer is explained by the fact that the heaviest storms of the winter came out of the west, so that the eastern corries of all the higher hills carried considerably more snow than the average, while the southern corries were not so heavily covered as usual. Descending to Loch Etchachan, we found near the shore of the loch the remains of a ptarmigan which had evidently been captured by a fox, and ample signs were present to show that this was a favourite feeding ground of the deer. On the waters of the loch white-capped breakers were being hurried along by a fresh sou'-wester, and we could not help thinking what a capital day it would have been to attempt to lure some of the large trout from the clear depths. At the southern end of Loch Etchachan many plants of the sea thrift (*Armeria maritima*) cover the somewhat boggy ground, and here we had an excellent view of a parcel of hinds making their way, with many halts for breath, up the steep slopes of Ben Mheadhoin. Curiously enough, though on Loch Etchachan the wind was strong and from the south-west, at the head of the Corrie Etchachan not a breath of air was stirring; and as we made our way down the corrie a cold easterly breeze blew up in our faces.

During our climb we heard a rifle shot, coming apparently from the corrie to our south, and now the hoodies were winging their way in the direction whence the report came. At the head of Glen Derry we stayed a while watching a large number of deer. On the sky-line we could just see the horns of a fine beast as he lay amongst the long heather, and on the slopes of the hill one very heavy stag was kept busy driving off smaller stags from his large following of hinds. In the soft evening light Glen Derry was looking wonderfully beautiful, its giant firs standing out dark and gloomy against the fading grasses, and as we neared Derry Lodge the setting sun was shedding his light on the slopes of Ben Bhreac, bathing the mountain with a pale pinkish tinge. All round us stag answered stag across the glen, and the air was warm and scented with the fragrant odour of innumerable pines, while to the west of Monadh Mor the setting sun was tinging the light cirrous clouds as they caught his last rays.

CHAPTER XI

THE VANISHING OSPREY

THE history of the osprey, so far as Great Britain is concerned, is a somewhat pathetic one. In olden days a pair of these birds had their summer home on nearly every Highland loch, and even in the Lake District of England there are records of eyries up to the end of the eighteenth century. Tradition has it that it formerly nested on the south coast of England, but it has long ago ceased to occur—except as a migrant—in that part of the country. And now it is to be feared that even from its last mountain strongholds the osprey has been banished. No more will the hen bird brood on her nest of sticks on the ruined castle on Loch-an-Eilan, nor will her mate, soaring down from dark Cairngorm, swoop like an arrow to the surface of the loch, and sail aloft bearing in his talons a captured fish. Even from Loch Arkaig —one of the last strongholds of the race—the fish-hawk has vanished, and we fear it must be owned that one of our most interesting birds of prey has been lost to us as a nesting species.

It may well be remarked with surprise that the golden eagle —in marked contrast to its near relative—is more than holding its own amidst its Highland strongholds. The explanation is that the eagle is a resident, the osprey a migrant. The most careful protection can—indeed, has been—given to the latter bird at its nesting quarters, but on the passage to and from its summer haunts it has to run the gauntlet of many unscrupulous gunners, who are ever on the look out for a rare bird. It is undoubtedly to a large extent owing to its migratory habits that the osprey has failed to hold its own in the British Isles. The migration of the mullet-hawk—to use a local name—has always appealed to us as being a subject of some considerable interest. Why the osprey should travel

south on the approach of winter, while the golden eagles remain in the north throughout the year, cannot easily be explained. At first sight the solution of the puzzle would appear to rest in the fact that the lochs are frozen over during a considerable part of winter, and thus the osprey is prevented from obtaining a necessary supply of fish. This argument would undoubtedly hold good if the osprey confined its fishing operations to fresh-water lochs alone, but, as witnessed by its name "mullet-hawk," this is far from being the case, and one would have imagined that the sea lochs of Scotland would have yielded fish in plenty, even during the most severe weather. It would seem to be the case that this southern migration is undertaken not so much on account of considerations of food as to avoid the cold of winter, for Great Britain is near the northern limit of the osprey, and in Greenland and Iceland it is quite unknown.

We recently had the privilege of visiting a stronghold where the osprey succeeded in holding its own for several years after its neighbours had disappeared from their ancient nesting sites. The eyrie was built on a tiny islet in a large fresh-water loch, and—in contradiction to a well-known authority, who states that the osprey's eyrie in Scotland is never placed on a deciduous tree—was constructed on a somewhat stunted and fragile oak. At the time of our visit—late autumn—the scenery near the loch was beautiful in the extreme. Weeping birches fringed the banks, their bright autumn tints contrasting strongly with the dark hill-sides above them—hill-sides on which belts of straggling pines extended beyond the birches and loomed dark against the snow above. The bracken had turned to flaming orange, save where it had been shielded from the ravages of the frost by the shelter of the woods, and beneath the trees it retained an almost summer greenness. On every side lofty hills rose from the water's edge, their upper slopes thickly coated with white, and every now and again a blinding squall of snow, sweeping down from the north, would blot out the whole country-side and would restrict the outlook even across the loch. As we pulled out into the water we noted a dark form soaring with a certain grim determination across the hill-side above the loch. At first we surmised him to be the osprey,

but a closer inspection showed us that a lordly eagle was making his way leisurely westward.

The osprey's eyrie, as we have stated, was built on an oak and on a tiny islet which, at the time of our visit, was almost entirely submerged. Situated at no great height above the ground, the nest was easy of access to even a moderate climber. It was in a somewhat dilapidated condition, and had not been tenanted for some considerable time, though we learnt that a solitary cock bird had been in the habit of turning up at the loch each May for the last seven years, having been unable, apparently, to secure a mate, and had every spring repaired the eyrie, to a certain extent, on his arrival. This is not the only case in which a solitary osprey has put in an appearance every year at his nesting site before the birds became quite extinct in the locality, though it seems almost incredible that the survivor should be unable to secure a mate through the winter months, for the osprey nests on sea cliffs in the Mediterranean, and is also met with as a nesting species in Spain and Greece. Thus, on its migration south at the end of summer, the surviving bird could scarcely fail to procure a mate to return with him the following spring.

Another explanation, though we doubt whether a satisfactory one, is that these individuals are old birds whose breeding days are over; but, whatever the cause, it is somewhat pathetic to see the solitary bird returning year after year, until he, too, disappears from his well-loved loch. It seems to be on the autumn migration that the osprey suffers most at the hands of its enemies. In the spring it rarely halts on its journey north, but in autumn it takes the southern stages leisurely, and often remains for days on end, fishing on some lake or reservoir in the southern counties. A few years ago a pair of ospreys were unfortunately shot in the New Forest. Whether a coincidence or not, it is a fact that since that time the Loch-an-Eilan eyrie has been deserted, and it is more than likely that the two victims were on their way south from their Highland loch when they were shot.

The food of the osprey consists entirely of fish. We have been told by the owner of a west coast loch on which the birds used to nest that the fish were never taken from the home loch, but that the birds invariably crossed the ridge

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and conducted their fishing operations on lochs principally to the west. On another loch of our acquaintance, however, the birds used to catch the fish for their young largely on their own loch. The fish in this case were principally pike, and sometimes an osprey would tackle a fish which proved more than a match for him, when the bird, after a struggle, would be dragged half under water and would be obliged to let go its hold.

The osprey will take trout with avidity, and sometimes grilse. Occasionally it tackles a salmon, but often with unsuccessful results. We were told, a little while ago, a most interesting story in this connection.

An angler, fishing a famous Highland river, hooked and landed a good fish of considerable weight. Nothing remarkable was noticed about the fish at the time, but when the salmon came to be eaten, the nail of a bird's claw was found deeply embedded in the flesh. From the size and shape of the find there could be little doubt but that the nail belonged to an osprey, and so an interesting romance was woven round the discovery. The probable explanation was that the osprey had buried its talons deep in the fish, and had been overpowered and dragged beneath the water by the terrified salmon. Evidently its claws had been so deeply embedded in its intended victim that a nail of a claw had to be sacrificed by the bird in order to free itself!

Before the ospreys disappeared from a certain Highland loch they were subjected to great persecution during the nesting season, and, in spite of every precaution, their eggs were frequently stolen. While the hen bird was sitting the boat on the loch was chained and padlocked, and watchers were placed in the neighbourhood, so that access to the island was wellnigh an impossibility. One night, during a blinding snowstorm, a certain daring character determined on robbing the nest. Having stripped naked, but retaining his cap on his head, he swam through the dark waters to the island. So wild was the night that the sitting osprey was quite unaware of his approach, and he was almost successful in capturing the bird as well as robbing the nest. The eggs he placed in his cap, and with his night's haul he swam back through the icy waters without arousing the suspicions of the watchers.

This was probably the most daring robbery of an osprey's eyrie, and one cannot be surprised at the number of attempts —both successful and unsuccessful—which were subsequently made, for unscrupulous dealers were ever ready to buy the eggs, and even collectors were sometimes not above offering a bribe for osprey eggs taken in Great Britain.

In North America the osprey is abundant, and nests in colonies. In Southern Russia it is also to be found, and its range extends along the coast of Northern Africa, and even into suitable districts in Asia. It will thus be seen that the extinction of the fish-hawk is purely a local one, and were it not for its migratory habits, it might be possible to re-establish it in some of its former strongholds amongst the hills. Even as it is, if these attempts at reintroduction were proceeded with scientifically and at several distinct nesting sites, there is just a possibility that the venture would prove successful, and that the osprey would be restored to us as a nesting species.

CHAPTER XII

THE COMING OF THE SNOWS TO THE HILLS

THE snows descend early on the hills. While the glens and corries are still bathed in warm sunshine and soft breezes, on the mountain-tops winter in all her grandeur and severity holds sway, and the rushing burns are silenced in her icy grip. The first stay of winter on the hills is usually a fleeting one; sometimes, however, the snows descend with little or no warning, and for a full week blizzards of snow sweep over the mountain summits, piling up great drifts in the sheltered corries, and leaving the exposed plateaux almost bare.

A wintry spell still holds as we set out one mid-October morning to penetrate to the haunts of the snows, for the hills are mist-capped and shrouded by passing snow showers. In the fir wood at the foot of the glen the air is mild, as the force of the wind is broken by the giant trees and the sun shines warm and clear. A heron is fishing at the burn side, and is disinclined to move at our approach. He flies a short distance with manifest reluctance, and then settles on the top of a fir tree, where the sun shines full on him. From the long heather at our feet a woodcock suddenly rises and darts off through the firs. At this elevation the woodcock is by no means common, and the solitary representative is in all likelihood one of the invading army of migrants from the north. As we push on up the valley the trees become more scattered, until only a few veterans clothe the hill-sides on either side of the mountain burn; but long after the last fir has been left behind we come upon a solitary rowan, overlooked during the summer months, but now conspicuous in its autumn tints against its sombre background.

On either side of the glen large numbers of deer are grazing, and stag answers stag in challenge across the corrie.

Some of the stags are still by themselves, but many of the larger beasts have already annexed a number of wives.

We note some very heavy deer, with excellent heads. One in particular carries a finer head of horns than we ever remember having seen in this part of the forest. Though he is several points short of a "royal," the size and span of his horns are remarkable, and he more resembles a park stag than an inhabitant of the hills. This stag is master of quite forty hinds, and is having a busy time in repelling the advances of rivals and in keeping the hinds from straying.

As we watch, another stag—also a heavy beast, but with a smaller head—answers the challenge of this king of the glen, and for two or three minutes they fight fiercely, charging each other with lowered heads. Suddenly, however, the newcomer is of opinion that he has taken on a somewhat too powerful adversary, and gallops precipitately down the hillside. The victor does not pursue, but turns half round, roaring repeatedly, as though to proclaim to all in the neighbourhood that he is ready to fight to the death for the possession of his hinds. Then he runs restlessly backwards and forwards, gasping for breath, and charging any hind which happens to be straying from the main herd.

The higher reaches of the glen are almost devoid of deer, and here the hills on either side of us are powdered with snow, which has been blown into the hollows in miniature snow wreaths. Turning abruptly to the west, we enter the corrie known to the Highlanders as "The Corrie of the Juniper." Here we are shut in on either side by precipitous hills—so steep that even at midday the sun is unable to penetrate to the corrie beneath—and in the glen itself the air is calm, for the north wind passes high over our heads. Against the darkness of the rocks we suddenly see the form of a golden eagle sweeping downwards with half-closed wings. Soon, however, he sails upwards, utilising the wind in a masterly manner, and rising rapidly with never a movement of his wings.

Higher and higher he mounts, until he appears a ghostly form through the flying clouds, and gradually is shrouded in the mist. His ascent into the clouds is interesting, for he can no longer scan the ground beneath him for the luckless

ptarmigan, and he must rise above the mist either for the joy of flight or else to reach the warm rays of the sun. At a height of considerably less than 3,000 feet we reach the first snow, and as we emerge on the top of the corrie and look across the dark loch where the burn has its birth we see the mist low on the farther hill-side. Even as we look, a cloud of thin grey vapour is being borne rapidly towards us on the north wind, and the loch is soon blotted out in its soft embrace.

Through the mist, then, we press onwards, having as our companions the mysterious ptarmigan, whose weird, croaking cry is often borne to us on the breath of the wind, though the birds themselves are quite invisible. Here a thin mist is falling, in the form of small particles of ice, and we are speedily transformed into objects more in keeping with our Arctic surroundings. At this height every grass stem is covered with a thin, feathery mantle of white, and as we pass a lochan we note that its surface is covered with a thick sheet of frozen snow and ice.

We are now on the summit plateau of the mountain, and, though a thin mist covers the hill, the sun shines through feebly with curious effect, lighting up the snowy expanse with its soft yellow rays, so that with little effort of the imagination we can almost persuade ourselves that we are walking on some mountain plateau in the Arctic regions. At the summit cairn we rest for a while. Gradually the sun shines with greater power, and at our backs is formed on the mist that ghostly rainbow known to all hill men as a "glory." There it remains during our stay on the plateau—sometimes bright, sometimes dimmed as the sun half hides himself, but always spanning the sky against its ethereal and misty background. To our west the hill dips suddenly, and in this sheltered hollow an enormous wreath of snow has been piled up by the northerly wind of the past week.

The snow is as hard as iron, and we are able to walk to the edge and look down into the corrie beneath. So far as can be judged, the drift is quite 25 feet in depth, and on the surface of the snow of the previous week last night's fall is clearly visible. At one point a miniature avalanche has fallen, and even as we look another stream of snow starts

on its way down the hill-side. The only means of descent on this side of the hill is by way of a narrow corrie, down which a small mountain burn rushes. To-day, however, the burn is stilled under its thick covering of snow and ice, and in the mist the corrie is none too easy to discover.

Suddenly, however, the cloud lifts entirely, and we have a glorious view of the corrie beneath us, bathed in bright sunshine. At the foot of the corrie the River Dee winds and twists down the glen, but, curiously enough, the weather far beneath us is dark and stormy, and the valley is black as night. The lifting of the mist has disclosed to us an interesting fact. The lower clouds, in which we have been enveloped, have been coming from a point just east of north, but the upper banks are now seen drifting before a wind which is almost due south. Over the top of the gorge the snow is of great depth, and it is with some difficulty that we cross the frozen wreath and enter the sheltered corrie.

On the ridge the north wind has been blowing strong and piercingly, but here it is quiet, and the air is pleasantly warm. From our point of vantage we are privileged to see the most wonderful cloud effects. The valley beneath us is filled with a dense white vapour, which floats backwards and forwards with the uncertain wind. Now it hides the hills across the glen from our view. Now the sun asserts himself, and the clouds take on a wonderful silvery tint. Through the rifts we have glimpses of the hills on the far west coast, for the weather to the westwards is more settled, and the hills in that direction are quite free of mist. During the first part of our descent the snow is hard and bears us with ease, but soon we find the snowy covering only in patches, and below the 3,000 feet level the snow is entirely absent.

From the glen beneath us the roar of a stag is borne faintly up, and we can make out half a dozen small beasts on a hill to our left. They are grazing quietly, evidently enjoying the warm sunshine, and are reluctant to change their ground. From some rocks at our feet a covey of ptarmigan rise and fly off into the sun, the light making their snow-white wings still more dazzling. The covey soon turn abruptly to the right, and disappear over the brow of the hill—all except one bird, which breaks away from the main body and flies off

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THE HAUNT OF THE SNOWS

in an opposite direction. Soon the ground in front of us is alive with ptarmigan, and we must flush close on 150 birds.

At a height of just less than 3,000 feet we put up a pack of grouse, though we never remember having seen these birds before in such an exposed corrie, but the warmth of the sun-kissed slope has evidently attracted all bird life in the neighbourhood. On the summits of the mountains across the glen the mist still lingers, though the corrie where is the seat of eternal snows is clearly visible; but now the old snow is concealed by the recent fall. From a hollow not many yards from us three small stags suddenly appear, and though so close to us, move down the hill-side in a surprisingly leisurely manner. We watch them for some minutes until they reach the bottom of the glen and ford the river in single file.

As we reach the path near the riverside and look back at the corrie which we have descended, we cannot but notice the varying contrasts in light and shade. Where we stand—at the foot of the corrie—the glen is already in shadow, for the sun has sunk behind the hills to the westward. Higher up, the sun is flooding the hill-side, while the top of the corrie is dim and half shrouded in a thin mist of a blue grey colour. In this glen we are surrounded by hills over 4,000 feet in height, and on Cairntoul the mist gradually lifts until the summit cairn is visible. Every rock on the upper parts of the hill is delicately powdered with a thin layer of snow, and in the failing light the snow takes on some of the grey blue colour of the sky above it. During our walk down the glen, we hear the crowing of the cock grouse and the roar of the stags on the heights above, and from the eastern sky, now free of clouds, the full moon shines kindly on the infant snows.

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One early September day the wind suddenly went round to the north, and that morning snow began to fall on the Cairngorms, continuing almost incessantly for three days. Two days after the storm had ceased the writer and a friend made the ascent of Ben Muich Dhui to ascertain the amount of snow that had fallen on the summit plateau, and had an experience probably unparalleled for the month of September. Leaving Derry the weather was dull and threatening, the wind having backed

to the south-west, but round Ben Mheadhoin was a clear patch of sky, with the top of the hill showing distinctly in the sun. As we walked up Glen Derry a golden eagle several times passed quite near us, either flying steadily or soaring majestically above the hill-side, at times on the keen look out for grouse. Down the side of Derry Cairngorm a burn which is usually quite insignificant was falling over the rocks in an imposing cascade, and was visible at a great distance. The higher reaches of Ben Mheadhoin (3,800 feet) were deep in snow, with large cornices leaning over the rocks, and even on the Larig an Laoigh Pass snow was lying. The Derry burn was in spate, and we noticed that at several points it had, a day or two previously, been right over its banks for considerable stretches. The severe weather had caused the deer to seek the shelter of the low grounds, and we saw none higher than about 1,700 feet. Although Ben Mheadhoin kept beautifully clear the weather to windward was very threatening, with thick mist on the hills, and by the time we entered Corrie Etchachan rain was falling, with a dismal appearance all round. There we flushed the only grouse seen during the day's walk, but a little farther on disturbed quite a large number of beautiful ptarmigan, already commencing to lose their summer plumage. The weather continued threatening until Loch Etchachan was reached, when the mist cleared suddenly, and the sun shone out with superb effect. The loch stood out sharply, and all above it was spotless white, while across to the north Cairngorm was specially grand, with its slopes deeply covered with snow, and the giant rock on the summit black as night. Above Loch Etchachan the path was obliterated by the snow, and we now began to realise what an extraordinary storm had been experienced in these parts. As we progressed the depth of snow rapidly increased, until at a height of about 3,700 feet we came on some drifts quite twenty feet in depth, and frozen so hard that we could walk with ease on the surface of the snow. Soon we came to the point from which the summit of the hill is visible, and one could scarcely realise that it was not midwinter, so arctic was the scene. An average depth of some three feet of snow covered the plateau, and in places it was frozen into almost solid ice!

The mist was just touching the summit, and it was very

difficult to make out where the hill ended and the clouds began. From this point we had a wild view of the top of snow-capped Derry Cairngorm, and behind it inky clouds which had all through the day been covering Beinn a' Bhuird. We were now in sight of the "snowy corrie" of Ben Muich Dhui, and, as far as could be judged, a fresh drift of at least forty feet covered the drift formed during the winter, which was still of a great depth before the new snowfall. At this elevation all the burns were running far beneath the snow, and the lochans were covered with snow and ice so as to be quite unrecognisable. In places where the snow had been swept off the ground by the wind, we noticed that the hardy grass which grows at this height had been quite killed by the severe weather, and when we reached the shelter, made by the sappers many years ago when they were surveying these heights, we found it half buried in snow and ice. From here to the summit cairn is only some 200 yards, and just as we gained it the mist cleared for a minute or two, giving us a very fine view. The Moray Firth in the clear atmosphere seemed exceptionally near, while Ben Rinnes, on the Spey, and the Buck of the Cabrach and Benachie, near Aberdeen, were also distinct. West, across the Dee, we had a passing glimpse of Braeriach and the Garbhchoire filled with snow; but the mist again descended, and we made all haste to safer quarters, as the summit of Ben Muich Dhui in mist and snow presents many dangers, with precipices all round.

The first part of the descent was made difficult from the fact that the snow occasionally gave way under us, letting us down suddenly, and also that large lumps of half-frozen rain came whirling before the wind. The edges of the precipices were filled by cornices extending outwards some feet, and in a thick mist one might easily have stepped out on them without being aware of the danger. We noted with surprise that, notwithstanding the great fall of snow on Ben Muich Dhui, Ben Bhrotain and Lochnagar had absolutely no snow on them, although neither of these hills is much short of 4,000 feet in height, and it was also curious to see how the mist constantly shrouded many of the lower hills, while Cairngorm and Ben Muich Dhui kept free nearly all the time. In the snow we saw footprints of ptarmigan, hares,

and foxes, and a surprising number of flies of various sizes were crawling sleepily along the surface of the snow. Strangely enough, the summit cairn was plastered with snow, not on the windward but on the leeward side, the explanation probably being that the gale blew the snow round to the leeward side, and there the back-flowing eddy plastered it against the cairn to a depth of quite three feet. About a mile from the summit we had a beautiful view of Loch Etchachan, with Cairngorm in the background, and between the two the dark hollow where Loch Avon nestles; but soon we left behind us the last traces of this exceptional September storm, and regained the low ground once more.

CHAPTER XIII

THE NESTING OF THE DOTTEREL

ALTHOUGH at one time numerous as a nesting species in the Lake District and the south of Scotland, the dotterel has, we fear, been quite banished from these localities, and now nests only on the summits of the higher hills of the Highlands. Its destruction has been to a great extent brought about by the high price set upon its feathers for the making of trout and salmon flies, and it is said that this alone caused its extinction in the Lake District. It is gratifying to be able to state, however, that it is holding its own in the more inaccessible parts of Scotland, and on certain hills is even numerous. Dotterel are migratory birds, and arrive in this country in May. For a few days they keep to the coast in flocks, but very soon leave for their nesting haunts. They are extremely regular in their nesting habits, and one can count on finding the hen brooding by the first week of June, but seldom at an earlier date. The nest is almost always made on the summit, or summit plateau, of a hill—very rarely on the slopes—and is merely a slight depression scraped in the moss or stunted heath. There is little lining to the nest, but one which I examined recently was lined with dried blaeberry leaves and a few pieces of lichen. Although nesting where they experience the full force of wind and storm, the dotterel rarely construct their nests under the shelter of a stone, but seem to prefer to sit out the storm, crouching low, with head against the wind. The young are hatched very near the longest day, and remain in the nest only for a day at the most. I remember once finding a dotterel's nest on June 22 with three very small chicks in it. Two of them seemed almost ready to run off, but the third was still helpless, and had evidently been hatched only an hour or two. It is rather curious that, unlike the majority

of the "waders," which invariably lay four eggs, the dotterel never has more than three in a clutch. In colouring the eggs closely resemble those of the golden plover, but they are more rounded in shape and considerably smaller in size. Of a buffish ground colour, they are blotched and spotted with red-brown, and the blotches are more pronounced at the larger end of the egg. Very often the first clutch of eggs is destroyed by a snowstorm, and on these occasions the hen will sometimes lay again, but this is by no means always the case. Young dotterel have been noted as late as mid-August, but if the first brood are successfully reared, the family are able to fly by the end of July or beginning of August.

During the season of 1907 we spent some days at a favourite haunt of these birds in the hope of obtaining some photographs of their eggs and young, but met with no success, owing to the severe snowfalls which were experienced all through the nesting season. The dotterel were nesting on the summit plateau of a mountain close on 4,000 feet high, where even the ptarmigan did not venture on account of the storms, and on June 22, when we visited the breeding ground, the weather conditions more resembled March than midsummer. Scarcely had we arrived on the plateau when a heavy mist descended, and soon a severe fall of snow was experienced. The flakes were of a large size, and in a few minutes had covered the hill completely. When the snow had ceased and the mist had cleared off, we were hopeful of finding any dotterel which might be sitting in the vicinity, as she would have been very prominent against the snow; but all the nests must have been destroyed by a previous snowstorm, for we saw the birds going in pairs, and at one spot noted as many as sixteen in a flock. In early July we again visited the plateau, on the chance of finding some of the birds nesting again, but they had evidently given up the attempt for that season. Some idea of the severity of these summer storms may be gathered when it is mentioned that on July 6 so much snow fell on the hills that four days afterwards the drifts in places were actually eight or nine feet deep!

In 1908 the dotterel were far more fortunate as regards weather conditions, and on June 22 of that year we spent the day in obtaining photographs of a dotterel at her nest. This

latter was situated on the side of a hill just over 3,000 feet above sea level, and contained three eggs, on the point of hatching. The nest was by no means easy to discover, as for long the bird ran about in a restless way, and refused to brood on her eggs, doubtless because she knew that in the great heat of the sun they were quite safe. At length, however, we saw her settle down, and, marking the spot, discovered and photographed the nest. This was situated about ten yards from a low sheep fence—which, by the way, seems a rather favourite situation for a dotterel's nest—and was slightly sheltered from the south by a small stone. While we were at the nest the bird gradually became more confiding, and ran round us at a distance of a few feet, calling plaintively. The usual alarm note is a whistling "twee twee," sometimes ending in a soft purring cry, and the bird has a curious habit of jerking its head backwards every now and again. Although we were at the nest, the mother bird did not seem unduly anxious as to the fate of her treasures, and fed quite unconcernedly near us, returning to the eggs immediately we had gone a few yards from them. By a novice the dotterel might well be mistaken for a golden plover, as its build and habits closely resemble those of the latter bird; but it can always be identified by the white stripe above the eye, and by its smaller size. It is also much more confiding than the golden plover, and nests at a higher altitude.

A few days after the date mentioned we again visited the haunts of the dotterel, in the hope of obtaining photographs of its young, but in this we were unsuccessful. The day was one of intense heat, and all the hills around stood out clearly. In the distance Ben Alder carried a great amount of snow, and of the Cairngorm mountains Ben Muich Dhui was still almost completely covered under its winter coat. After a short search, we came upon the mother dotterel, but although we waited for some time, she did not show the slightest inclination to return to her young, which no doubt were hiding near. Several times she tried to draw us away from the spot by feigning a broken wing, but as we were not deceived by her ruse, she remained quietly about a hundred yards away, and calmly awaited our departure. Of the

young we could unfortunately see no trace, so after a time we were reluctantly compelled to leave the nesting site without success. During the time we had been on the lookout for the young we could hear thunder muttering all round, and as we were descending the hill a fresh storm suddenly gathered overhead. To our south and east the sky was black as night, while turning westwards the eye was dazzled by the bright sunshine. The lightning was exceptionally vivid, and the peals of thunder sounded right overhead; but as regards rain we were extremely fortunate, for we had very little, while half a mile up the valley we could see it descending in a solid sheet, and, on the cloud lifting for a moment, had a glimpse of the hill-top quite covered with hail! After the storm we motored up the valley, and found the burns coming down in full flood, carrying down stones, and even small trees in their course. At one part of the glen several lapwings and redshanks had young, and as the river rose and flooded their nesting ground it was sad to see the nestlings battling with the flood and the old birds flying above them, encouraging them with eager cries. The young redshanks seemed to be quite at home in the water, but not so the lapwings, nearly all of which were drowned in spite of our attempts at rescue. We thought of the dotterel covering her chicks in the storm, but she, at all events, ran no risk of having her young carried off in the spate.

When the young dotterel are full grown they form into flocks, and the old and young birds of several different hills seem to join together. Until autumn they remain on the heights, but early in October young and old leave for the coast, and, later, for warmer countries, to return again at the breath of the spring and of the south wind.

CHAPTER XIV

THE FULL OF THE MOON ON CAIRNTOUL

To many Cairntoul is the most imposing mountain of the Cairngorm range. Whereas Braeriach, Ben Muich Dhui, and, to a lesser extent, Cairngorm, have had their summits worn comparatively flat and insignificant by countless storms, Cairntoul, as seen from the Larig Ghruamach pass, is a mountain in the real sense of the word, its summit rising sharp and distinct, and presenting a true Alpine appearance. Regarding the origin of the name Cairntoul a good deal of uncertainty exists. By some it is held to be the "hill of the barn," from the fact that, seen from the west, the hill has a distinct barn-like appearance; by others "hill of the hollow" holds considerable favour, and certainly this interpretation of the Gaelic name is a happy one, for an enormous crater-shaped corrie covers the entire eastern face of the mountain, and to the casual observer appears to be of distinctly volcanic origin. To Cairntoul, then, we set out one glorious winter morning, in order, if possible, to penetrate to its icy summit, and although, owing to unfavourable weather conditions, this plan had to be abandoned, we had, nevertheless, one of the most interesting days of our experience.

As we make our way up the Larig, the morning, though dull, gives a certain promise of better things to follow, and ere we reach the Corrour bothy the rising sun is tinging the summits of Cairntoul and Ben Muich Dhui an exquisite pink. Though shining on the tops, the lower slopes of the hills are as yet in gloom, but this serves to accentuate the beauty of the sun-kissed summits. The cairn on Cairntoul can be seen to be covered deep in ice and snow, and the hill as a whole is buried under its white mantle. In the Larig comparatively little snow is covering the ground, except where it has been piled up into wreaths; but the River Dee is held

fast along the whole of its course by a covering of ice —a covering so thick that the sound of the waters running far beneath is effectually stilled. A mile or so west of the bothy an enormous snow wreath curls over the Tailor's Corrie of Ben Muich Dhui, and, as far as can be estimated, the wreath is not far short of 100 feet in depth. We have noticed that this drift accumulates to a very great depth every season, but, curiously enough, is one of the first snowfields to disappear from the hills, and is rarely in existence after the end of June. Near the bothy three dark specks are visible on the snow, and by means of the glass are made out to be red deer. Though the situation is very exposed, with no shelter of any kind nearer than Derry Lodge, two or three hardy stags are usually to be found grazing in the neighbourhood of the bothy until an exceptional snowfall drives them to the low ground. To-day they are exceedingly wild, and make off up the pass in great alarm while yet we are a good half-mile off.

Near the bothy we cross the bed of the Dee and make our way up the Corrour burn to where it rises on the south plateau of Cairntoul, at a height of some 3,000 feet. Above the Corrour bothy the burn runs through a deep gorge, and as a result of a recent storm this gorge contains a truly enormous quantity of snow, and will probably retain its icy covering till early July. It is here that the first ptarmigan are met with. On the slopes of the Devil's Point a large pack are feeding on the tender shoots of the heather and blaeberry, and through the glass we watch them for some time. Several of the birds—in all probability last season's broods—still retain the dark feathers of the autumn plumage. The cock ptarmigan are much in evidence, and strut about with tails in the air, calling repeatedly in their weird, croaking language. Sometimes their cry resembles nothing so much as the ticking of a fishing reel, or the winding of a clock. At our approach they rise in a body and wing their way across the corrie. We find, at a height of some 2,500 feet above sea level, a considerable depth of snow—quite 12 inches—which renders the going somewhat tedious. At this point we hear the twittering of a flock of snow-bunting, and see the birds in the distance as they cross the hill-side. The tracks of a fox mingle with

those of the ptarmigan, and doubtless the freebooter has taken toll of the birds as they roosted at night. Before the ridge of Cairntoul can be topped a very steep slope has to be surmounted, and to-day this is by no means easy, for the snow on the slope is hard, and steps have to be cut with considerable care. Fortunately no "spindrift" is blowing, and soon we emerge on the plateau, to look upon a scene of wild grandeur. A westerly gale sweeps across to us from the summit of Monadh Mor, and sou'-west Ben Bhrotain is seen dimly through the driving clouds. A temperature of just over the freezing point prevents drifting, but small particles of ice are being driven before the gale, and all around us is an unbroken mantle of white. At times the sun pierces the mist for a few seconds, and the cloud effects are grand in the extreme. The weather at this stage changes for the worse, and we abandon the idea of making the summit, contenting ourselves with a view from the cairn of the Devil's Point, the most southern spur of Cairntoul. Here we are hemmed in by lofty precipices on three sides, and over the rocks gigantic cornices have formed, making it a matter of considerable danger to approach them.

As we commence the descent to the Larig dusk has fallen, and the full moon, low in the eastern sky, is shedding her rays on the mountains, adding a cold grandeur to the lonely scene. The wind has shifted to the north, and dark snow clouds fast obliterate her light. Soon a violent blizzard of dry snow blots out every object more than a few yards distant, and it is with difficulty that we discover the bothy and find some shelter from the storm. The wind now sweeps down the Larig with the force of a whole gale, and the drift is being swept along in a blinding, choking cloud. Large wreaths are rapidly formed, and just as the outlook has begun to look serious the storm abates somewhat, and though as yet in the Larig the drift is blinding and impenetrable, the dark outline of the Devil's Point looms up through the storm. The outlook now improves, and one of the most beautiful scenes it has ever been our lot to enjoy gradually unfolds itself. Very slowly the moon—though as yet hidden from us by the shadow of Cairn a' Mhaim—floods with light the corries of Cairntoul, and the "spindrift" is lit up with magical

effect. The summit only of the Devil's Point is as yet in moonlight, and the dazzling white of its snowy top contrasts strikingly with the deep gloom of its lower slopes. And now the crowning beauty of this wonderful scene unfolds itself. Behind Cairn a' Mhaim the sky becomes light as day, and gradually the full moon in all her splendour appears to our sight. Hidden she is at intervals by flying clouds, driven at express speed before the gale, but time and again reasserts herself, and floods all the pass with her rays. On Braeriach, to our north, the clouds still linger on the summit, but the lower slopes shine spotlessly white, and the shadows of the clouds are clear cut and distinct. Opposite us, on the rocks of Cairn a' Mhaim, the wind strikes with terrific force, and a surging, as though the booming of surf on the seashore, is borne to us against the wind. The higher slopes of Ben Muich Dhui and Cairntoul are as yet hidden in the clouds, and on Ben Muich Dhui the storm can be seen raging fiercely. As the evening wears on the moon rides high in the heavens, the wind moderates somewhat, and as we make our way down the pass an intense frost sets in, which covers our hair and clothes with an icy crust. Fortunately, the wind is favourable, otherwise it would be almost impossible to face the cutting drift; and so we make our way to the low grounds amidst a veritable fairyland, a scene more Alpine than any we have had the privilege of enjoying amidst the glens and corries of the lone Cairngorm mountains.

CHAPTER XV

AT THE PEREGRINE'S NESTING HAUNT

It is a most regrettable fact that the peregrine falcon is now on the decrease almost everywhere in the British Isles, and this decrease is due largely, we venture to assert, to the unjustifiable animosity directed against it by the keepers on every grouse moor. We are fully aware that in the defence of the peregrine we are treading on delicate ground, especially from the point of view of the game preserver, but we write from a somewhat extensive knowledge of the habits of this most intrepid and fascinating hawk, and can honestly affirm that the damage done by a pair of peregrines on a grouse moor is often greatly overrated. During some interesting expeditions which we made a short time ago to the peregrine country, we were fortunate in finding the birds in occupation of the two nesting sites visited, and on examination of the various victims lying in the vicinity of the eyries we were impressed by the entire absence of the red grouse from among their number.

The first eyrie which we visited has had a most unfortunate history, for since 1907, when we first discovered the nest, not a single chick has been hatched, though the nesting site has been in use every year. It is situated on a rock at an elevation of some 2,000 feet above sea level, and seawards—that is, in an easterly direction—has a magnificent outlook. During 1912 we twice examined the eyrie, and there was no indication that the nest was in use although both birds were in the vicinity. It was quite possible that the eggs had been stolen, but for several reasons we are inclined to think that the birds were somewhat later than usual in laying. On the top of the rock—where the birds are in the habit of bringing their prey—we found, on our second visit, the remains of a small bird and numerous pigeon feathers, but, it is of interest to say, no signs of grouse.

A few days afterwards we made an exceedingly interesting expedition to a mountain loch, on the shores of which a pair of peregrines have had their eyrie for many years. In this instance the birds are left more or less undisturbed, and generally succeed in hatching off their young safely. The eyrie is situated in a rock perhaps 200 feet above the level of the loch. The stalker who accompanied us was unaware of the exact locality of the eyrie, so we walked cautiously along the top of the rock until we found on a little knoll the remains of one of the peregrine's victims—an unfortunate teal from the loch below.

A little farther on we had the satisfaction of seeing the hen peregrine soar out from the rock and fly restlessly about, uttering her clear and strong alarm note. At this point one of the party, whose hearing was not of the best, and who had failed to observe the peregrine when she left the rock, for some time stood listening intently, then confided to the writer that he imagined he heard a duck quacking out on the loch. Considering that the peregrine was flying around quite close to us and repeatedly uttering her piercing cries, this incident struck us as being not without a certain humour. We surmised that the location of the eyrie would be a comparatively easy matter, but in this we were mistaken, for there were no signs of a nest in that part of the cliff from which the hen had emerged. Almost immediately she had been joined by her mate, and although the latter was more timid and flew at a greater elevation, the two birds circled round us, showing their wonderful powers of flight to the full, and both uttering anxious cries. We were interested in noting that the alarm note of the male was uttered in a higher key than that of the hen and that his cry was repeated more rapidly.

In our search for the nest we came upon the remains of two teal ducks, and discovered, at the spot where the hen bird was seen leaving the rock, another victim—a golden plover. This bird had evidently been killed only a few hours previously, and was quite untouched except for the fact that the head was severed from the body—doubtless by the blow from the hawk. After considerable searching we imagined that we had discovered the eyrie—at the roots of a mountain ash. On one of the party being lowered to the

HOME OF THE PEREGRINE

spot at the end of a rope, he reported that remains were certainly present of what appeared to be a former eyrie, but that there were no signs of its being in occupation. As the hen bird was constantly soaring round a certain part of the rock, we decided upon waiting quietly to see whether she would return to the nest. Often the peregrine passed quite close to us, and we had ample opportunity of admiring her powerful flight. Occasionally she would close her wings and shoot earthwards for a few yards, but as quickly would sail up to her former elevation, all the time uttering her alarm call note.

After a few minutes of quiet watching on our part we were delighted to see the peregrine sail closer and closer to a certain part of the rock and ultimately fly on to her nest not 100 yards from us. We marked the spot closely, and by exercising a certain amount of care I and my stalker-guide succeeded in reaching a point within six feet or so beneath the nesting ledge. We now signalled for a rope to be thrown from the top of the rock, and by its help the stalker was able to reach the ledge. He reported a nest with three eggs, apparently freshly laid, but in such a position as to be quite out of reach of the sun's rays, which by this time were flooding the face of the rock. On our way back to the head of the cliff we came across feathers of numerous bird victims, but amongst them not a single grouse.

All this while the cock peregrine had been soaring high above the loch, and for a short time a second male bird was visible. We are informed that this is by no means an unusual occurrence in the case of the peregrine, but that, during the nesting season, a second cock bird is not infrequently in the neighbourhood of the nesting site, ready, we imagine, to take the place of the rightful husband should any harm befall him. We had barely reached the foot of the rocks on our journey homewards before the brave hen peregrine was again circling round her nesting haunt, and as we looked we had the good fortune to see her alight—with the evening sun shining full on her—on the edge of the eyrie. There she remained motionless for some minutes, seemingly exhausted after her incessant calling, before walking into the recess where her eggs were resting and taking up her station for the night.

CHAPTER XVI

AT THE SOURCE OF THE DEE

FEW of our Scottish rivers have their birth-places in grander or more desolate surroundings than the Dee, which rises on the western side of the wild plateau of Braeriach, at a height of some 4,000 feet above sea level. There are two distinct ways of reaching the Wells of Dee: one is from Aviemore, by way of the Rothiemurchus forest; the other, from Braemar, although rather the longer route, is, we consider, the more interesting of the two. From Braemar the way leads up the valley of the Dee as far as the Linn, where the road branches off towards the north, following the Lui valley until Derry Lodge is reached. The day chosen for our expedition to the Wells dawns with ideal autumn weather, the fierce October storm of the previous day having been replaced by blue skies and a mild westerly wind. The valley of the Dee is looking extremely beautiful as we make our way past Mar Lodge and cross the river at the Linn, the birches in their autumn tints contrasting vividly with the dark green pines stretching far up the hillsides. As we cross the Linn we see ample traces of the recent storm, for the river is running in large volume and coloured a rich red by the peat washed from the bogs. Shortly after leaving the Linn behind us we have a very fine view of Cairngorm of Derry (3,860 feet), whose conical peak is always conspicuous and distinctive, and the vast bulk of Ben Muich Dhui, the second highest hill in Great Britain. Several heavy showers are sweeping across the Cairngorms from the westward, and the hills are now and again heavily veiled in driving mist and rain, while distinct rainbows make their appearance every few minutes. These latter, however, we are informed by an old stalker whom we meet, are in reality a good omen, and show that the rain will not be

heavy, but that flying showers only will be experienced during the day. Traces of a recent snowstorm are apparent on Derry Cairngorm, which carries a fresh drift at a comparatively low level; but, curiously enough, Ben Muich Dhui, so far as can be seen, has no fresh snow in its corries. After leaving Derry Lodge behind, the path leads almost due west, and a fine view is obtained of Ben Bhrotain (3,800 feet) and Monadh Mor. This latter hill usually carries an extensive snowfield in its eastern corrie, and in 1908 it was not until October 29, after an exceedingly mild autumn, that it completely vanished.

It is just above Derry Lodge that the two rivers, the Derry and the Luibeg (the little Lui) meet, and from this point onwards till they reach the Dee the combined waters are known as the Lui. The path, after leaving the lodge, follows the course of the Luibeg for some distance, and on the hill to the south of the burn we cannot but remark upon the tremendous amount of damage done to the pines by a terrific gale which was experienced some fifteen years before. Hundreds of the trees were uprooted by this storm, and these trees, still lying bleached on the hill-side, give us a vivid idea of the force a winter gale can attain in these exposed regions.

We soon reach the edge of the forest, and the last tree we pass is a veteran, which has at length succumbed to old age and the rigours of the climate, and stands there, gaunt and forbidding, with its leafless branches stretched out above the path. It is just here that the track leaves the burn and rounds the shoulder of Cairn a' Mhaim—an extensive hill over 3,000 feet in height—from whose summit an unsurpassed view of the Cairngorms can be obtained. The sportsmen were busy on this hill on the day before our expedition, and several stags were grassed. We note, as we pass, some hoodie crows making for the hill from various quarters, and know that they are hoping to feast on the remains of the deer on the hill-side. Even on a quite insignificant hill to the south we note several patches of fresh snow, and on Ben Bhrotain and Monadh Mor there appears to have been a severe storm, but the snow is rapidly disappearing under the influence of a mild west wind. As we round the shoulder of Cairn a' Mhaim

and enter the Larig Ghruamach (the gruesome pass), the giant Cairngorms to the north-west gradually unfold themselves. First the Devil's Point appears, with the morning's mist clinging about its summit, where the golden eagle has its eyrie in an inaccessible rock; then Cairntoul standing out clear and sharp in the sunlight, with its large crater well defined; and ultimately Braeriach, the second highest of the Cairngorm mountains, and probably the most extensive of the range.

At the foot of Devil's Point is situated a lonely bothy, where for at least three and a half months a solitary watcher has his home. The bothy has for some reason been built on the western side of the River Dee, which flows down the Larig, and thus, when the river is in flood, the stalker has at times great difficulty in crossing on his journey to and from Braemar, where he usually spends the week-ends. As we pass the bothy we see smoke issuing from the solitary chimney, but there is no sign of the watcher, who is in all probability on the hill. His term of watching is now almost at an end, and a few days more will see him installed at his winter quarters in more civilised surroundings. Although only half a dozen miles from the source of the river, the spring salmon assemble in large numbers in a pool in the river just below the bothy. The pool is known as the Fish Pool, and salmon which leave the sea in the beginning of the year find their way here by the first week of July, after being many months in the river. Curiously enough, however, the fish often retain their silvery appearance right up to the time that they reach the Fish Pool. As we pass by the bothy we hear a harsh croak, and see a raven round the side of Cairn a' Mhaim, flying at a great height, and appearing only a small speck in the sky. He disappears rapidly in a westerly direction, so that probably he has scented food from afar. We also note a merlin soaring at an immense altitude over the summit of Cairn a' Mhaim, and darting hither and thither in its sharp lookout for prey. This little hawk is, it is to be feared, decreasing steadily in the Highlands, as it stands a very slender chance of rearing its young where grouse preserving is attempted—and it is usually on a grouse-moor that the merlin makes its nest, choosing as a nesting site a

THE UPPERMOST REACHES OF THE DEE

patch of long heather, and scraping a hollow at the side of some boulder. Far up the slopes of Cairntoul we hear the roaring of the stags: we can make out a fair-sized herd, showing as tiny specks against the rocks and heather, and soon we note that two of the stags are hard at work fighting. With locked antlers they sway backwards and forwards for a time, till apparently a truce is called, and they walk off quite peacefully. Such is not always the ending to a fight, however, and a stalker informs us that he has come upon a stag with its skull split clean in two as the result of a battle royal with a rival. Leaving the bothy behind us, we flush several coveys of grouse; in fact, we do not ever remember seeing so many in this district, where fox and golden eagle take such a heavy toll of *Lagopus scoticus*. Having arrived at the Pools of Dee—which must be carefully distinguished from the Wells—we leave the path and strike up the very steep side of Braeriach.

The Pools of Dee are situated on the summit of the Larig Ghru, and are known as one of the sources of the Dee. They are not, however, a true source, for the water comes in reality from Ben Muich Dhui, and flows for some time underground, to reappear at the Pools. On the southern side of Ben Muich Dhui is a snowdrift of over 100 yards in length, which was drifted into the corrie by a fierce storm on the last two days of August, when the summit plateau of the hill was covered to a depth of quite four feet of snow.

After leaving the Pools of Dee we notice that the blaeberry crop is a specially abundant one, the berries even at this height (3,000 feet) being of large size and well ripened. As we push up the hill-side we flush one or two ptarmigan —already changing to their winter plumage—and hear one of these birds croaking mournfully on the slopes of Ben Muich Dhui across the Larig. Having arrived at the summit plateau of Braeriach, we have a beautiful view of the valley of the Spey, on which the sun is shining brightly, the houses of Aviemore standing out with remarkable clearness. The waters of Loch Mhorlich below us are a beautiful azure blue, while farther away Loch Insh and the Spey also carry the reflection of the sky. On the hills behind Aviemore the mist hangs low and threatening, and it would almost seem as

though a thunderstorm were imminent; but in the sheltered valley of the Spey the day is an ideal one.

As we reach the summit cairn of Braeriach a thin mist has descended, and we can only dimly discern Lochan Uaine and Cairntoul across the Garbhchoire. The wind sweeps up from the precipice below us, swirling the mist before it with extremely grand effect—an effect that is heightened from the fact that the foot of the precipice is completely hidden in the clouds. The Wells of the Dee are situated rather more than a mile from the summit of the hill, in a westerly direction, and here the Dee has its birthplace at a height of some 4,000 feet above the level of the sea. There are several wells, but even from the largest the body of water issuing from the ground is comparatively small, though by the time the stream falls over the almost perpendicular side of Braeriach it is quite a fair-sized burn. Although at such a great height, its banks are fringed with luxuriant grasses and mosses, and in July the delicate cushion pink colours the whole plateau with its rose-tinted flowers. We decide to descend to the pass, if possible, by following the river over the rocks, and after an exciting climb, during which one of the party has a narrow escape, we succeed in reaching the valley of the Garbhchoire, which is, being interpreted, "the Rough Corrie." We now have a view of a peregrine falcon beating the hill-side for prey. When first we see him he is a mere speck above the summit plateau, but soon he shoots downwards with wings almost closed, and then suddenly remains motionless, with wings outstretched, scanning the hill-side for some luckless ptarmigan. He is unsuccessful, however, and soon darts off to another part of the corrie. It seems rather curious that the peregrine should choose as the scene of his operations the windward side of the hill, for ptarmigan, and, in fact, all bird life, dislike wind, and usually shelter on the leeward slopes. An easy walk down the Garbhchoire brings us once more to the Larig Ghru, and by the time we round the shoulder of Cairn a' Mhaim the last of the sunset has disappeared in the western sky, and the moon, rising over the hills to the eastward, is flooding the pass with her rays. Cairntoul is mist-capped, and the moon has a peculiarly beautiful effect on the

cloud wreathing the mountain-top, turning it to a shade of exquisite pink, while the shadow of the Devil's Point is clearly defined across the side of the hill. As we near the Derry, and cross the Luibeg burn, the moon is high in the sky, and is reflected on the hurrying waters of the stream with great beauty. The air, which has hitherto been mild, even warm, now becomes rapidly cooler, and a frosty mist is rising from the valley sleeping peacefully in the clear moonlight, while the roar of the stags on the hills on either side of us is the only sound to break the stillness of the autumn night.

CHAPTER XVII

DEER DRIVING

It is usually towards the end of the stalking season that deer driving is resorted to in a certain number of the larger Scottish forests. The practice is not at all general—in fact, it is the exception rather than the rule, for comparatively few forests lend themselves to successful driving, and to ensure a successful result to a drive the corries must hold an abundance of stags. So far as can be judged, driving is more prevalent in the central forests of Scotland than in those near the coast. In some of the larger forests in the former situation the corries are extremely wide, and cover for the stalker is almost entirely absent, so that driving is the only method of getting at the stags. One such corrie we know of, which is between five and six miles in length, and is invariably well stocked with deer during the summer and early autumn months. The corrie is driven almost every season—usually in the month of September—but, in order that the drive may be successful, the wind must be from a southerly or south-easterly quarter.

Many sportsmen have a decided prejudice against having the stags driven up to the rifles, and it is true that in a drive the deer have not the same chance as when a stalker pits his own wits against those of a stag. As we have already stated, however, some corries are almost impossible to stalk, and often, even in the best regulated drive, every stag escapes scot free. Driving is a good method of clearing the forest of old or sickly beasts, and we imagine that good results would follow if such drives were of a more common occurrence. Unless alarmed, the stags go past the rifles in single file and at a comparatively slow speed, and it should be a matter of ease for the experienced stalker to pick out the undesirable beasts as they pass him.

THE RAVAGES OF A CLOUD-BURST ON THE HILLS, SHOWING SOME OF THE ROCKS BROUGHT DOWN THE HILL-SIDE

We recently had a conversation with a stalker as to the most certain method of distinguishing a stag which was old or diseased. He was of opinion that an old stag was recognisable by the tips of his horns. These, in the case of a young or healthy beast were, he stated, of a lighter colour than the remainder of the antlers, while in the case of an old stag they were dark and decayed. On mentioning this to another stalker a few days later, he took quite a different view, and asserted that on his ground the young stags had not infrequently the tips of their antlers quite black and decayed. This, he considered, was the result of the feeding, and proved nothing with regard to the animal's age. In his belief there were two or three points which distinguished an old or unhealthy stag. In the early parts of the season he was recognised by his coat, the old winter coat being shed late. Then, again, an old stag has usually lost many of his teeth, and so cannot crop the heather cleanly. If he is spied at when grazing, it will be noticed that his teeth very often fail to meet on the heather and break it off in an irregular way. This point can, of course, be noted only during a careful stalk, but in a drive an old beast can usually be picked out by its large belly and the condition of its coat.

It is always well to postpone a drive until late in the season, for when a corrie has been driven a considerable period elapses before the stags again take up their quarters there. Sometimes, however, a certain glen may be driven early in the season—perhaps during the first week in August, before the stags are clear of velvet, and then a second time towards the end of September. Although as a general rule a stag is not shot until he is clear of the velvet, there is no real objection to shooting a beast, either for the larder or for his head, before the velvet has disappeared, provided the animal be in good condition and the horns fully developed. In a corrie of our acquaintance, which is between five and six miles in length, the driven stags take an hour or so to cover the distance. The time is interesting, as showing the rate at which deer travel when disturbed but not thoroughly alarmed. If not pursued too closely the herd usually move in single file, but when alarmed run huddled together. When the stags have reached the zone of fire their

behaviour varies greatly. Should they all be composed of deer from one herd they will press onward at all cost, following their leaders. Should several distinct herds be together, the leader of the second herd will probably wheel round at the sound of the firing, and then the whole herd will dash madly backwards, paying no heed to the stalkers or gillies who are attempting to hold them on their original course. At a time such as this their fear of man is completely eclipsed by their dread of crossing the firing line, and they will pass a stalker, seemingly quite oblivious of his presence, at a distance of only a few yards. A stalker informed us that he once had a narrow escape from being knocked down by one such terrified beast. There were a good many trees on the ground, and the stag was upon him before he realised his danger. The stalker had just time to throw himself flat on the ground, and the stag cleared him with a flying leap, but our informant was of opinion that if he had remained standing the stag would not have hesitated to charge him down.

It is a somewhat interesting point as to which stag leads the combined herds when they move down the corrie. It seems to be the case that the stag most familiar with the ground leads the way—sometimes even a hind is the leader, but when the stags are driven it is but seldom that they have hinds with them. When driven, deer quite refuse to go in any direction except up-wind, and as a result of this a successful drive depends entirely on the direction in which the wind is blowing. When walking at their leisure, however, and when retreating from a storm, stags move just as readily down-wind as against it. The number of stags driven down to the rifles during a successful drive varies immensely. Two or three hundred is quite a common number, and we have known of instances where as many as eight hundred were driven down a corrie. In an extensive drive four or five rifles take up their positions at certain points at which the stags are most likely to break away, and as many as twenty stags have been grassed when every condition has been favourable.

One of the disadvantages of driving is the number of wounded beasts which escape. This is more or less unavoidable, and after the drive stalkers are sent after these beasts.

KINDLING A FIRE IN A DEER FOREST

Although a certain number are tracked down and killed, it is next to impossible to locate every wounded stag, and these latter linger on, often for many months, perhaps even years. Of course, it may be said that even in stalking a certain number of wounded stags escape, but in a drive there is not the same possibility of marking down the wounded stags.

Sometimes a deer drive is attempted on comparatively flat country, but is rarely successful under these conditions, for it is next to impossible to keep the stags within the necessary radius. One of the most deadly methods of driving deer —provided, of course, the forest contains suitable ground— is to post a rifle or rifles at the top of a narrow gorge which lies at the end of an extensive corrie. There is one such corrie that we know of, from which there are only two possible means of exit for stags which are driven up the corrie. The ground has not been disturbed for a number of years, but formerly a watcher was posted at the head of one of the gorges when the corrie was driven, with the result that the stags were obliged to leave the glen by the one remaining exit open to them. A rifle was stationed on the skyline just at the head of the gorge, and was able to pick off the stags as they emerged on to the plateau from the almost perpendicular slope.

It may be interesting to give an account of a drive as seen from a watcher's point of view. If the wind is favourable he will probably be spying from the door of his cottage to where the advance guard of stalkers are first to be seen as they appear over the skyline from the lower grounds. It is, perhaps, the duty of this particular watcher to report periodically on the number of beasts in the corries on his beat, and it is largely owing to his report that the drive is undertaken. When the drive has been decided on, the watcher leaves his outlying bothy to go round the highest parts of the corries and to drive in any stags which may be in the neighbourhood. The day of the drive is, we shall say, towards the latter end of August. Summer still lingers on the hills. A soft breeze from the south blows gently up the valley, and the sun shines from an almost cloudless sky. Immediately after leaving his bothy the watcher has to face a steep climb,

which, in the great heat, is no light task. He soon enters the ptarmigan country, and flushes, maybe, several coveys of these birds—the two parent ptarmigan and their nearly full-grown chicks. The heat makes the coveys lazy, and they fly only a few yards before settling down again amongst the short heath. The last part of the climb is the steepest, and a narrow, precipitous gorge having been surmounted, the stalker finds himself on the edge of an extensive rolling tableland. The air is intensely clear, and the view is superb. Range upon range of hills stand out to the westward, terminating in the well-known shape of Ben Nevis and in the hills of Glen Coe. A lochan in a corrie beneath him reflects the azure blue of the sky, and its surface is rippled by the gentle wind. The stalker has eyes only for the stags which are grazing on this extensive tract, and is gratified to make out several hundred beasts dispersed over the ground. Some are feeding at the lochan's edge; others, again, are on the highest ground of all, and are lying half-asleep in the strong sunshine. A few of the heavier stags are clear of the velvet, but most of the beasts still retain the covering of skin on their horns. They are nearly all in excellent condition; some heavy beasts are among them, and, thanks to the fine and dry season, their coats are in exceptionally good order. Progressing with great care, the stalker is successful in herding several hundred stags into the mouth of an extensive corrie. He knows that, once in this corrie, other watchers stationed at suitable points of vantage will control the movements of the stags, and that the only circumstance likely to interfere with the success of the drive will be a change in the direction of the wind. His work accomplished, the stalker descends leisurely after the deer, and the crack of the rifles in the distance tells him that at least some stags have descended their well-loved corrie for the last time.

CHAPTER XVIII

THE NESTING HAUNT OF THE SNOW BUNTING

ALTHOUGH passing the winter with us in large numbers, the snow bunting (*Plectrophenax nivalis*) very seldom remains in Scotland through the nesting season, and until 1886 it had not been proved to nest in this country. In that year, however, a nest containing young birds was found in Sutherlandshire, and since then isolated pairs have been met with nesting on some of the higher mountains in the north of Scotland. The writer had long been of opinion that the birds nested on a certain mountain, which must for obvious reasons remain nameless, but until a year or two ago no absolute proof of their nesting could be obtained, though there was no doubt that the birds remained in the locality during the summer. Early in August, 1908, a hen snow bunting was seen in an eminently suitable nesting site, and so the next season a thorough search was made, with very successful results.

It was ten o'clock on a soft summer evening that the writer, accompanied by a friend, left the outlying stalker's lodge and made for the hills. The day had been mild and cloudy, with occasional rain, but towards evening the conditions improved, and, the glass remaining steady, the outlook appeared favourable for a fine day on the morrow. As we made our way up the glen the higher hills could be faintly seen, shrouded by the mist, and now and again showers of fine rain were swept down on us from the mountains. By midnight we had gained the pass from which the ascent of the hill is made, and in the pass we had an exceptionally grand view of the mountain range looming up darkly before us, with an occasional snowfield showing in marked contrast to the surrounding gloom. For some time the moon had been endeavouring to force her way through the clouds, and at length succeeded in doing so, with beautiful effect. She was

low on the horizon, and her beams were thrown right up the pass, while the whole sky, with the exception of a small opening through which the moon was shining, was thickly clouded. Soon a dense shower swept down the glen from the north, and as the rain entered the part on which the moon was throwing her light, a magnificent lunar rainbow was formed. The span of the bow was some 600 yards, and extended well across the pass. The colours were faintly visible at the eastern end of the bow, but to the western side they could not be distinguished, that portion of the arch appearing as a ghostly grey streak; in fact, for some minutes we were of opinion that it was an exceptionally heavy downpour of rain descending on the pass at that particular point. After spanning the glen for quite fifteen minutes the bow gradually faded, and by this time we noted that the light of dawn in the north-east was contesting that of the moon, which ultimately had to retire after a short and extraordinarily beautiful reign.

It was close on twelve o'clock when we forded the Dee and made a short halt at a lonely bothy, where a solitary watcher resides during the summer months. A fine, penetrating rain was now falling, and we took what shelter we could at the leeward side of the hut. From this point the climb commenced in earnest, the way leading straight up a precipitous hill-side, and walking being rendered difficult owing to the extreme roughness of the ground and the, as yet, feeble light. Totally unaware of our presence, a hen grouse commenced to call loudly a few yards from us, her nasal notes, "Yow, yow, yow," being immediately answered by the cock bird in a muffled "Kurr, go-bak, go-bak." Suddenly the sounds ceased, and it was evident that the birds had become aware of the close proximity of an enemy. The mist was curling over the top of the hill above us, and at times was being swept far down the hill-side in the form of smoke. Across the valley Ben Muich Dhui was covered by a thick cloud, but the weather now seemed more promising, and the higher clouds had already commenced to take on a beautiful salmon-pink colour. A cock ptarmigan greatly resented our presence, having evidently a mate with young in the vicinity, and kept up a continuous croaking until we were some distance

from him. By 3.30 a.m. we had gained the summit plateau, which lies well over the 4,000 feet level, and were caught in the full strength of a piercing westerly wind, which was driving a thick mist and fine, drizzling rain before it, the temperature at the time being only a few degrees above freezing point.

Having gained the plateau, we were in close proximity to the nesting site of the snow bunting, and by 4 A.M. had commenced our search. We were soon rewarded. Almost immediately the clear, whistling song of the male bird was heard, and on reaching the spot from which the notes came we were delighted to see a snow bunting, resplendent in his black and white breeding plumage, fly off, still uttering his song. By this time the mist had lifted somewhat, and so, by judicious stalking, the writer approached as near as possible without disturbing the bird. He was perched on a large boulder on the hill-side, and constantly uttered his song, which had far more power and resonance than that of the common or yellow buntings. The song consisted of six clear whistles, commencing in a low key and gradually rising. The bird, while singing, moved about the rock, and seemed to have the power of singing either loudly or softly; at all events, some of the "songs" sounded much louder than others. He also had the power of making his song appear to come now from one part of the hill-side and now from another. After a time he flew down from the rock on which he was perched and commenced to feed, running quickly about and picking up what seemed to be minute insects. He then flew off up the hill-side, and, to the writer's delight, a young snow bunting ran up and stood expectantly, with open beak and trembling wings, before the parent bird. The latter immediately began to feed the chick, and was soon engaged in feeding a second of his offspring.

Marking the spot carefully, I crept up, and, sure enough, came upon a young snow bunting scarcely able to fly. It had probably left the nest only the day before, as it allowed me to approach within five feet and to obtain a number of successful photographs, which, I venture to think, are the first photographs ever secured of a young snow bunting in this country. By extreme good fortune the sun just before com-

menced to shine with great brilliance and power, and the photographs were taken under ideal weather conditions. The hen bird did not seem so attentive to her chick as did the cock; but once she came quite near and endeavoured to make the young bird fly off by hopping alongside of it and encouraging it with soft, twittering notes. She then fed it, quite regardless of my presence. After a time the young bird became restless and flew off a short distance, but as I had obtained several photographs I was quite satisfied, and did not disturb it further.

We next crossed over to the other side of the glen, from which direction a second snow bunting was heard in full song. We soon located the bird, and watched him feed a couple of young ones, singing loudly from time to time as he did so. The bird was most conspicuous, and his black and white plumage could be made out at a considerable distance. Besides his song he uttered, while running along the ground, a short, sharp note, "tzink, tzink," much resembling the call of the meadow pipit. It was noted that in both instances it was the male who tended the young birds most affectionately, the female being seldom seen. After singing for a time on a rock the cock bird would flutter into the air, and then stoop at great speed, much in the same manner as a tree pipit, uttering his song as he descended. Any ornithologist who hears the song of a snow bunting for the first time must be struck by its great wildness and power, as it is totally different from that of any other bird of this country, and has a charm and sweetness all of its own. The song is quite easily heard at a distance of seven or eight hundred yards, and in still weather would probably be audible at a distance of nearly a mile. Some of the young birds which we observed appeared to be sheltering in crevices between stones, and one had difficulty in gaining the open at our approach.

When the cock and hen were together one was much struck by the great dissimilarity in their appearance, for in marked contrast to the brilliant plumage of the male bird, the hen was soberly clad in greyish brown, with a few white feathers which showed only when she took wing. Shortly after finding the second pair of birds with young, we flushed a couple of pairs which had either had their nests destroyed by the snow,

or had reared one brood and had not yet commenced a second nest—though it is improbable that the snow bunting rears two families in the season. Thus in a few hours we had the good fortune to come across four pairs of snow buntings, of which at least two were proved to have nested in that particular glen. The nest of the snow bird is usually placed on a rugged hill-side, under the shelter of a rock or stone. It is composed of dry grass and moss, with a lining of a few hairs and generally feathers of ptarmigan. The eggs, which number from four to six, are greyish-white, spotted and blotched with brownish-red and purplish-black.

After our success we spent several hours in searching the neighbouring hills for further traces of the birds, but after leaving that particular glen, which might suitably be known as "the glen of the snow bunting," we did not see or hear a single other individual, although we flushed many packs of ptarmigan, and occasionally came across a mother ptarmigan with a couple of young birds. We noted at least two packs of ptarmigan, each consisting of quite thirty birds, all without young, and this gave one some slight idea of the harm done to the nests by the snowfalls of May and June. We searched at least two more hills carefully, without success so far as the snow bunting was concerned, but still we obtained unsurpassed views of the mountain ranges to the west, with Ben Alder and Ben Nevis in the background, while to the north the Moray Firth and Ben Wyvis, towering behind it, were conspicuous objects. We ultimately regained the stalker's lodge after a day of twenty-one hours spent among the corries and plateaux of the highest group of mountains that Britain can boast of, happy in the knowledge of having identified and photographed the snow bunting at its wild Scottish stronghold.

CHAPTER XIX

ON CAIRNGORM STONES

It was during a recent expedition to the high hills that we came across a rich vein of cairngorms. The corrie in which the stones were found was buried in the most out-of-the-way spot, where probably not a single human being had penetrated during the last century; and we discovered the vein in rather a curious way. We set out early one beautiful October morning to obtain a series of photographs of a snow-field which has never, even during the hottest summer, been known to disappear. Our way for some time led through a glen, with a few ancient pines and birches growing near the burn, and on a hill-side near were the remains of what had been a thriving wood, but which had, during a winter storm many years ago, been completely razed to the ground. All the trees had been uprooted from a northerly direction, and the trunks were now lying white and bleached in the sunlight.

Rounding the shoulder of the hill, we found a heavy gale sweeping down upon us from the westward; in fact, so furious was it that at times it was almost impossible to make progress against it, and soon the hill-tops were enveloped in a furious storm of snow. As yet brilliant sunshine prevailed in the pass, and the sun, striking on the driving snow, lit up the flakes as they swirled down before the gale with dazzling whiteness. When the snow was upon us we sought the shelter of a large rock, and awaited, in comparative calm, the passing of the storm. Soon the sun regained the mastery, and with the hill-tops clear and powdered with a thin covering of fresh snow, we pushed on towards the higher grounds. Far up on the hill-side above us the stags were roaring, and every now and again a couple of beasts would fight furiously for a few minutes.

Soon we had for our companions the ptarmigan. All

around us these birds kept up a continual croaking, though appearing quite confiding, and even preening their feathers when we were but a few yards from them. When they took wing we noted that they were rapidly changing from their summer plumage of lichen grey to their winter dress of snowy whiteness. Ptarmigan are almost continuously moulting, and their plumage of early summer is quite different from that of September. This change of plumage, though a wise provision of Nature, sometimes leaves the ptarmigan in a most awkward position, for in early winter, after the birds have donned their winter dress, a period of mild weather often ensues, leaving the hill-side almost bare of snow. This, of course, renders the ptarmigan an exceptionally easy prey to the fox and the golden eagle; and on occasions such as these the birds spend most of their time on any lingering snow-fields, only venturing off to feed for short periods when they imagine their enemies are absent.

As we neared the snow-field the weather changed for the better, the hills being clear of mist and the atmosphere much milder than earlier in the day. Close by the drift we found fields of delicate Parsley fern—which, by the way, we have almost always found growing in proximity to snow—and the grass, not long freed from its snowy covering, was fresh and green. The snow-field, originally an enormous mass covering the whole of the corrie, had now dwindled until it had split up into four separate patches. On the left was a small drift some ten yards in length and very grimy in appearance. The next field was some thirty yards long by twenty broad, but the largest patch was in the centre, and was close on fifty yards in length and quite thirty in breadth. So far as could be estimated, the depth was not less than twelve feet, but the snow was as hard as iron, and it was almost impossible to stand on it, so steep was the angle at which it was lying.

While measuring the drift we noticed a vein of quartz running up the rock immediately above the snow, and on examining it were delighted to see that embedded in the rocks were the points of some very fine cairngorms. The cairngorm is readily recognised by its hexagonal shape and tip pointed much after the manner of a sharpened lead pencil.

The deeper the colour the more valuable the stone, it is said, and on the present occasion the cairngorms were sherry-coloured and of good quality. The finest stones are very often found embedded in a certain kind of clay, near a quartz vein, but lying quite free of the rock, and as the clay was present in this instance, protruding from under a large rock, we determined to move the stone to see whether any cairngorms were actually beneath it.

Although the boulder seemed in an unstable position, it took a couple of hours' hard work before it was dislodged and sent roaring down into the snow beneath. One of the party was in a precarious position towards the end of the levering operations, and at one time it was feared that he would accompany the rock on its downward journey! Sure enough, in the clay exposed by the departure of the stone numbers of cairngorms were found. They were of various sizes and shapes, but not a few of them were perfectly formed and with scarcely a flaw. A thorough search was made—a search which was somewhat rudely interrupted by a boulder becoming dislodged from the top of the rocks perhaps 300 feet above us—and quite a rich haul of stones was made. The spot was an ideal one, for the rock under which we found the cairngorms is under snow for eleven months out of the twelve, and often remains buried throughout the year.

As we retraced our steps down the corrie the sun was setting in splendour behind the hills to the west, and we had a magnificent view of a pair of eagles. First one bird came into view, soaring at a fair height and apparently on the outlook for prey. Higher and higher he soared, until at length he reached the sunshine, the setting sun shimmering on his plumage with wonderful effect. Soon he was joined by his mate, when, circling round each other, they ascended to an immense height, appearing mere specks in the sky, as, after a series of evolutions, they headed eastwards. As darkness was falling, one by one brilliant rays of light shot up into the northern sky, and soon the whole of the pass was lit up by a magnificent display of aurora, by the light of which we made our way to the low country.

CHAPTER XX

THE COURTSHIP OF SOME MOORLAND BIRDS

It is when the breath of spring descends once more on the hills, and when, at its coming, frost and snow take their departure, that the birds of the mist turn their attention to the thoughts and cares of family life. Many of these hill birds do not remain on the high grounds throughout the winter, but are drawn irresistibly to their mountain homes at the first lessening of the cold, and often penetrate to the hills while frost and snow still hold sway on the high grounds. Often, too, these migrants are overtaken by a heavy snowstorm after their arrival at their summer quarters, and not infrequently pay for their hastiness with their lives—for they never apparently possess sufficient reasoning powers to realise that a retreat to the coast is still open to them, but remain at their frozen surroundings until they fall victims to cold and starvation.

The courtship of the golden plover—*Charadrius pluvialis*—seems to us to be singularly charming. Spending the winter on the coast, it is usually early March before these waders arrive on the hills. Making the migration in flocks—often of considerable size—the birds soon break up into small companies, and during the latter days of March the hills resound with the plaintive whistle of the male bird as he woos his mate.

It was during the last week of March, 1912, that we had occasion to traverse a boggy hill-side, where many golden plover—or "rain birds," as they are called in some districts—had their home. The day was dull and threatening, and the clouds hung low on the hills, but the air was warm and still, and the cries of the plover were audible at a great distance. Sometimes the birds were invisible in the mists, and during their evolutions flew at a considerable height. A certain note which they made use of was invariably accompanied by a

slowing of the wing beats, and the fact is interesting as applying also to the oyster-catcher during the mating season. The particular call-note to which we refer consists of two whistles—the second long-drawn and plaintive—and, although difficult to reproduce in writing, sounds rather like "whoo-wheeu." Even supposing the plover has been flying at great speed and with very rapid wing-beats, he invariably slows down his flight when using this particular note—for the reason, we imagine, that it would be inconvenient to utter a long-drawn and deliberate call-note when the wings are being moved rapidly. We had not realised until this particular day that the golden plover was capable of such rapid and powerful flight. Descending from a great height, some of the birds we had under observation would "stoop" like a hawk, travelling at lightning speed until close to the surface of the ground, when they would shoot up again into the mist. When the birds have paired, and when the hen is sitting on her four eggs during the month of May, the cock stands motionless for hours on end on an adjacent knoll where he has a wide outlook of the surrounding country, and gives warning to his mate at the first signs of danger.

In the courtship of the curlew there is again the breath of the hills noticeable to a very marked extent. Like the golden plover, the curlew is only a summer visitor to the moors, and he takes his departure to his winter haunts at a season when many of the golden plover still linger on the uplands. To every bird-lover the vibrating call of the curlew must always be a sound of singular charm, for what other bird combines in his love song such infinite sadness with the music of the wilds? A shy and unobtrusive bird, the curlew would be often overlooked were it not for that almost startling whistle of his, which echoes through the hills from early morning to sunset from March to July. So far as our experience goes, however, the curlew never makes use of his song during the hours of darkness, being in this respect unlike the lapwing, who is often as active during a bright or moonlight night as during the hours of daylight. When courting his mate the male curlew rises from the heather, and, flying to a considerable height, sails on outstretched wings a short distance towards the ground. He again rises almost perpendicularly

with a short fluttering flight, then rising and falling alternately for some minutes, and showing the poetry of flying to the full. Now he slowly sinks earthwards, giving utterance to his wild vibrating song which, commencing in a low key, gradually rises, increasing in strength until the top note has been reached, when the song as gradually and musically dies away in gentle and mournful tones.

Many oyster-catchers remain in the low country throughout the summer months, but on the east coast of Scotland, at all events, most of the birds have their nesting sites on the upland reaches of the rivers and in the lonely glens, where they may have as their companions the lordly eagle and the silent-flying hoodie. A short time ago, while at an eagle's nesting site on some rocks above a mountain burn, we saw a pair of oyster-catchers apparently arriving at their nesting haunt after their migration from the coast. Coming from the southward, the birds were flying only a few feet above the surface of the water some 100 feet below us, and alighted on some shingle at the burn-side, one of the pair remaining quite motionless for some minutes while its mate started out on what we surmised was a tour of inspection.

On quiet spring nights during the nesting season the oyster-catchers are constantly to be heard uttering their clear, sharp, whistling note, for these birds seem to be fully as active at night as during the hours of daylight. We have repeatedly seen very curious behaviour on the part of the "sea piet" during the spring months, and have an idea that this is largely incidental to the mating of the birds. Three or four oyster-catchers may be standing quietly at the water's edge, when suddenly a certain individual bird, with head almost touching the ground, commences to walk excitedly about, uttering short sharp whistlings the while. The excitement is infectious, and in a few seconds some half-dozen birds are playing a game very much like "follow my leader," each one with head depressed in a most comical manner, and each uttering the same excited cries.

The sandpiper, or summer snipe, usually arrives with his mate at the summer haunts—whether the birds pair before their overseas migration or after their arrival in this country is doubtful—and during bright April days the male bird may be

seen pursuing the hen backwards and forwards across some highland river. In the early mornings, before the sun has risen above the hills, the sandpiper at times flutters almost stationary over some part of the water, uttering his twittering song the while—a song which is quite unlike the notes of any other bird, and which in the early morning stillness may be heard at a considerable distance.

The blackcock is a born fighter. Even during the autumn and winter months the birds meet on some chosen ground with the greatest regularity, but it is through the months of March and April that these battles are fought with the fiercest energy. At the earliest dawn blackcock assemble from the various parts of the forest, and on visiting a favourite fighting ground one morning we were interested to see, in the dim and uncertain light, dark shadowy forms charging each other vigorously, the white feathers of the outspread tails being the only parts of the birds clearly visible in the semi-darkness. With fresh arrivals reaching the fighting grounds every few minutes, there soon were assembled quite a number of combatants, who kept up their fighting until shortly after sunrise. On this occasion the fights seemed to take place in the spirit of friendly rivalry rather than in grim earnest, but such is not always the case, for we have known of instances when one of the blackcock has been killed by his rival after a long and strenuous encounter, and we have it on the authority of veteran stalkers that sometimes both birds are so exhausted that they pay little or no attention to the human intruder, having not sufficient energy left to fly off at his approach.

The most interesting point in the fighting of the blackcock is, of course, their habit of spreading out their tails fanwise, lowering the black tail feathers and exposing to view the white plumage normally hidden by the tail. There may be present at these early morning fights two or three grey hens, which, with true feminine fickleness, appear now in one part of the field, now in another, and urge the cock birds to greater feats of strength. Almost immediately after sunrise the fighting ceases, and the birds feed quietly on the grass for some little time before dispersing until the following daybreak. On account of the apparent unwillingness of the blackcock to fight in sunshine, it is probable that the combats are continued later

in those fields sheltered from the early sun than in those lying exposed to the eastern sky. An interesting point is the fact that many of the blackcock, even after they have finished fighting, and have commenced to feed, still hold their tails spread out in a warlike attitude, as though ready to engage in combat once more on the least provocation.

In their methods of courtship the ptarmigan—*Lagopus mutus*—closely resemble their near relatives the red grouse. They are somewhat unlike the latter species, however, in that occasionally—or even frequently—the birds remain in pairs throughout the winter months, when the hill-sides are deep in snow, and when food is to be obtained only on the wind-swept ridges. It is probable that the courtship of the ptarmigan takes place at a somewhat later date than that of the grouse. Rising from the snowy wastes, the cock ptarmigan flies almost straight up into the air, and descends, croaking loudly, to where the hen is an interested spectator of his manœuvres. Then spreading out his tail feathers much in the manner of a pouter pigeon, the wooer struts around defiantly, driving off with fury any rivals. Often the wooing of the white grouse is somewhat rudely interrupted by a golden eagle soaring over the hill-side, and then the ptarmigan, forgetting hastily all thoughts of courtship, seeks safety in precipitate and aimless flight. Whether owing to his size or his superior eating qualities, it seems to be the case that he is more often carried off by the eagle than the less obtrusive hen.

Like the sandpiper, the ring ousel probably secures his mate before arrival in this country, but during April he may be heard pouring out his rich song on the lonely hill-side, singing, perhaps, from the topmost branch of some dead and bleached birch or rowan, and throwing his wild notes far across the glen. It is a somewhat interesting fact that the mountain blackbird is frequently found in close proximity to an eagle's eyrie, and we have on two occasions heard the ring ousel in song only a few hundred yards from where an eyrie of the king of birds was situated.

Of the courtship of the eagle but little is known. It is in keeping with the strength of their character that they should pair for life, and as it is more than probable that their age exceeds the human span, this union must be a particularly

binding one. When in trouble or doubt of any sort, the hen eagle relies on her mate for aid, calling for him repeatedly and scanning the horizon anxiously for the welcome form soaring high in the heavens. We have seen, during the early spring months, the courtship of the eagle—the birds circling round each other in the sky, and occasionally one of the pair—probably the cock—swooping down to his mate like an arrow from above.

It is probable that the eagle is on a higher plane intellectually than most of the members of the bird kingdom, and that when one of the birds falls a victim, as is so often the case, to a trap set for vermin on a grouse moor, the survivor feels the loss more keenly than is generally imagined. During the six long weeks when the hen is brooding on her eggs the cock-bird is generally to be seen sailing above the glen in which the eyrie is built, and when the young are hatched takes his turn in guarding the nest or providing the young ones with food. Certainly in the character of the eagle are traits which even the human race would do well to imitate, for in his determination and constancy he is an example to all men.

CHAPTER XXI

LATE OCTOBER IN THE FOREST

In the majority of the Scottish deer forests stalking ends on October 10, though in isolated cases, where the forest is small and the stags do not come on to the ground till the cold weather, the season may be prolonged until the fifteenth or even the twentieth of the month. After the close of the stalking the forests enjoy a brief period of rest, for the hind shooting is rarely commenced till November, and a day spent with the stags on the hill-side during this period of quiet is always interesting.

In 1911 the rutting season commenced somewhat earlier than usual. During the last week of September the weather became very stormy, and the hills were snow-covered on the 28th of the month, although the wind kept westerly. On the wind veering to the north on the 30th, a perfect blizzard was experienced on the high grounds, and for the next week or so snow fell heavily, with the result that the hills presented a midwinter aspect and all the stags were driven to shelter on the low grounds, almost immediately seeking the company of the hinds.

After the rifle had been laid aside in one of the larger Scottish forests we spent a couple of interesting days on the hill. The weather conditions had by this time changed for the better, and although of nights the frost was severe, the sun shone bright and warm through the day, melting the snows on all but the highest grounds.

Our way to the corrie where are to be found some of the heaviest stags in the forest leads us first through a fir wood, where we flush a solitary woodcock—in all probability a recent arrival from the north—and disturb a heron in his fishing operations at the burn-side. Soon we leave the trees behind and enter a wide and extensive corrie where stags in plenty

are to be found during the rutting season. To-day the glen is deserted, but on the hill-side opposite we can make out several very heavy beasts, each with his attendant company of hinds. Good heads there are in plenty, but one attracts special attention. A fine royal, his horns are remarkable both for their size and the width of their span, and he appears to be without a doubt the king of the glen. With him are thirty or forty hinds, and the stag is having all his work cut out in order to prevent them disappearing with one of the numerous small stags which stand expectantly around at a safe distance. Roaring repeatedly, the big stag rushes around, now chasing a young stag with great fury, now pursuing an unoffending hind, which looks up in mild surprise, but bolts precipitately before the anger of her lord. It is the small stag-calves, however, which seem to annoy the big stag most. Often he singles out one of these little fellows and pursues him in hot haste for a considerable distance, though in speed he is no match for the small fugitive. It seems to be invariably the case that a stag during the rutting season spends a considerable portion of his time in pursuing small calves, and these apparently unnecessary chases tend to exhaust a beast almost as much as his encounters with rival stags.

Near our big stag has been standing for some time another beast with an excellent head, though in weight somewhat inferior to his rival. After a while he advances up the hill-side in response to the oft repeated challenge of the big stag, and the two fight furiously for a short time. The challenger, on account of his advance *up* the hill, is handicapped considerably, for when a stag fights he endeavours to do so in as advantageous a position as possible, and if he is pushing *downhill* the advantage gained is obvious. For some time, then, the two stags fight with honours easy, but the big stag, on account of his heavier weight and the choice of his position, soon gains the mastery, and his rival, suddenly wheeling round, rushes off downhill. The victor roars defiantly for a while and then makes for some peaty ground, in which he paws in a half-hearted way with his fore feet before lying down and rolling over and over in the peat. This done, he scrapes his antlers in the soil and then proceeds to rub them on his back, going through the performance more than once.

What with his constant rushes and false alarms, he has little enough time for feeding, but occasionally grazes for a few moments, though ever on the alert.

Striking up a gorge leading off the main corrie, we are successful in getting close to a considerable number of deer. One stag we note with a large following of hinds. He is a heavy beast, but his head is insignificant, being scarcely more than a switch, though his sharp horns would prove extremely formidable in a fight. An amusing incident occurs as we watch the herd. The stag observes one of his hinds apparently about to leave his protection, and rushes at her angrily. Instead of giving way, however, the hind merely gazes at him in surprise, and then proceeds solemnly to scratch her ear, whereupon the stag hesitates and walks off in rather a shame-faced manner.

Some hundred yards from us a stag is lying down just on the sky-line. He is somewhat drowsy and evidently in a very contented frame of mind; but every now and again, as though in duty more than anything else, he gives utterance to a sleepy roar. As we lie concealed in the long grass we see coming straight towards us a fine ten-pointer. He is, curiously enough, without a single hind, and is evidently on the look out for some of the gentler sex, for he roars repeatedly as he crosses the hill. Near us is feeding a small stag with a couple of hinds, and these disappear down the hill-side at the approach of the larger beast. The latter makes straight for us, and we wonder whether he will pass without perceiving us or getting our wind. As he crosses the hill-side—about thirty yards above us—we have an excellent sight of his head as he walks unsuspiciously past, but when opposite where we are lying he suddenly hesitates, then leaps madly over some invisible obstacle, and finally goes on as though nothing had happened. After a time he gets our wind and rushes wildly across the hill for a short distance, but soon gains courage and returns defiantly, roaring twice. From our place of concealment we essay the imitation of a roar, and the beast pauses, his eyes showing his complete bewilderment. He finally turns about and walks slowly to the edge of the corrie, where he scans the ground beneath him, evidently in search of hinds; but he is disappointed in his quest, and

when last we see him he is walking in the direction of the watershed.

Our second day in the forest is passed under superb weather conditions. A thick mist during the early morning is soon dispelled by the sun, and as we push on up the big corrie we find that all the deer have taken to the high grounds. Near the head of the glen we can make out through the glass the antlers of a resting stag, and, favoured by the wind, we succeed, after careful stalking, in reaching a point some thirty yards from him. He is a small beast, with an indifferent head, and lies basking in the sun with half-closed eyes, quite unconscious of danger. We lie watching him for some time, until he becomes vaguely uneasy and sniffs in an inquiring way. He is not reassured, for he rises to his feet, then jumps from side to side before making off at a frightened trot.

Looking across to the opposite side of the corrie, we have an excellent view of a fine stag with a following of some forty hinds. As we watch, a peregrine sweeps into view over the brow of the hill and sails for some time above the herd, his plumage brilliantly lighted by the strong sun. For a while he circles around, taking several flights as though to make off, but always returning to his former station. Once he stoops to earth, but rises, as far as we can make out, with empty talons.

To-day we find few stags below the 3,000 feet level, but on an extensive plateau between two watersheds the whole population of the forest seems to have assembled. Many of the stags have annexed no hinds, and wander restlessly over the plateau, roaring repeatedly. Here we come across the "big stag," and we are somewhat surprised to find that his following of hinds has decreased by half. A few yards from him another smaller stag is roaring defiantly, and though the big beast replies occasionally, he makes no effort to drive off his rival. One stag we have under observation—a small beast with quite a good head—has not yet succeeded in ridding himself of the velvet. This in late October is an almost unprecedented occurrence, but we are informed by an experienced stalker that, owing to the exceptionally dry summer, the velvet hardened on the horns, and the stags

in some instances have found it quite impossible to remove it. During the month of August, when the beasts usually clear themselves of the velvet, the stags were on the highest grounds, above the limits of heather growth, and as it is mainly by rubbing their horns in the heather that they lose the velvet, they had not the same facilities for clearing themselves as if they had been driven by cool and unsettled weather to the lower grounds.

CHAPTER XXII

THE ETERNAL SNOWS OF THE CAIRNGORMS

By many it is asserted that Lochnagar has the distinction of carrying perpetual snows in its corries, but I have never been able to confirm this belief; and it is certain that, if by any chance an eternal snowfield does linger on this mountain, it is in a most unfrequented spot. Beinn a' Bhuird (3,918 feet) is probably the farthest east of the Cairngorms to have a snowy corrie of any interest. A few hundred feet below the stony plateau is a snow-wreath which, as often as not, remains on the hill-side throughout the year. In 1907 this was the case, and in 1908 it was not until the first days of October that the drift entirely disappeared. In 1909 the snow, though a small patch by October, never completely vanished; and in July of 1910 was, if anything, larger than usual. Heavy gales towards the end of August, and many hours of continuous sunshine in September, however, caused it to disappear very rapidly, and it vanished between September 15 and 16.

When on the summit of Lochnagar on October 11, 1910, I had the exceptional experience of having under observation the whole of the Cairngorm range of mountains, as visible from this point, without being able to distinguish the least trace of snow in any of their corries. A few days spent on the Cairngorms at a slightly later date showed, however, that a considerable amount of old snow remained, and I was fortunate in obtaining some interesting photographs of these snow-wreaths. A visit was paid one very fine autumn morning to a field that has never been known completely to disappear, even during the hottest summer. Lying at the extreme end of the Garbhchoire, in a corrie known as the Fuar Garbhchoire (the cold, rough corrie), it is sheltered from the mild winds from the south and west, and after mid-day is in

THE ETERNAL SNOWS

deep shadow. Readings taken with the aneroid show the height to be 3,600 feet, and in this unfrequented corrie snow is always to be found. Even as late as the end of July the whole corrie was deep in snow, but by the time of my visit it had dwindled until only four isolated patches remained. The largest was some 45 yards in length by 30 in breadth, and, as far as could be judged, from 8 to 10 feet in depth. The middle field was, roughly, 30 yards in length, and on either side were two small fields. Taken as a whole, the snowfields were wonderfully similar in extent to what they were at the corresponding season of 1909, although on July 17 of the present year there was more than twice as much snow in the corrie than was the case on July 4 of 1909.

After visiting the snow-wreaths at the head of the Garbhchoire, I crossed the desolate plateau of Braeriach, disturbing on the way a golden eagle, and looked over into the grand corrie of Loch Coire an Lochan, which, by the way, is the highest loch of any size in Great Britain. From the eastern side of the corrie I imagined I could make out, through the glasses, a small field of dirty snow on the western slope, but as the whole hill-side had a thin sprinkling of fresh snow, it was somewhat difficult to distinguish the old from the new. While on the summit cairn of Braeriach I had an interesting experience. I had been scanning Ben Nevis through the glasses in brilliant sunlight, when suddenly a thin mist enveloped the hilltop where I was. The cloud came from a north-easterly direction, and on the sun shining through the mist a curious horseshoe shaped rainbow or "glory" appeared almost at my feet, and remained until the mist cleared off.

Another interesting expedition was made to Ben Muich Dhui, which in its numerous corries can boast of a couple of snowfields which rarely, if ever, completely disappear. The first one visited was in the so-called "Snowy Corrie," only a few hundred yards from the summit of the mountain, and at a height of almost exactly 4,000 feet above sea level. I remember some years ago crossing the field towards the end of September, and finding it quite 300 yards in length, but on this occasion the drift was only 60 yards in length by 30 in breadth, and a couple of feet or so in depth. Following

the Garbh Uisge, I passed two more fields lying in sheltered hollows, and a small drift still remained on the shores of a lochan just above Loch Etchachan. During the previous winter the heaviest storms came from a westerly direction, and this fact accounted for snow lying at such a low level on Ben Muich Dhui after a summer—on the hills, at all events—of considerable warmth. The snow examined was ridged and furrowed in the most curious manner, and presented much the same appearance as ripples on the surface of a loch. Near the margins it was more or less solid ice, and all over was extremely hard. It is probably owing to the fact that the snow is "packed" so firmly by the winter gales that it can resist the mild winds and long hours of sunshine during the summer months, for I have known of a snowfield on the lower slopes of Ben Muich Dhui which, when measured in early April, was close on 100 feet in height, and yet had completely disappeared by June 23 of the same season, although the weather was exceptionally cold. As regards the Snowy Corrie, the snow is swirled for miles along the plateau in front of any northerly or north-westerly gale, and is packed very closely in the corrie. One can understand the facts which prevent the snowfield on Braeriach from disappearing, but the drift on Ben Muich Dhui, besides having the sun on it until well on in the afternoon, is exposed to the full force of the southerly winds, which cause the snow to disappear more rapidly than the warmest summer day.

From the highest snowfield on Ben Muich Dhui a stream of considerable size was issuing, which at first seemed as though it must come from the melting snow, but closer investigation showed that the burn issued from a spring farther up the hill-side, and passed right through the drift. Here I found fresh traces of deer and roosting hollows of the ptarmigan. It is a curious fact that this grouse of the mountains seems to have an affection for the snow, and will roost on the surface of a lingering field even when the rest of the hill-side is quite clear. Another interesting expedition was paid to Ben Muich Dhui just before the fresh snow fell, to the snowfields at the head of the Feith Bhuidhe burn, which in reality is the source of the Avon. Here, lying on some giant slabs of rock, are several fields of snow which are usually found in the corrie

even after the hottest summer. The day chosen for the expedition turned out one of the finest of the autumn. In Glen Derry I had a good view of a number of herds of deer, and in one case lay for close on half an hour watching a very fine stag driving off intruders from his following of hinds. He never allowed himself a moment's rest, for he was either roaring or rushing here and there after numerous young stags, which fled incontinently on his approach. Even his hinds had many uneasy moments when he was charging down, as it seemed, right upon them, and moved off in a mildly protesting fashion.

On crossing the ridge to the north-west of Loch Etchachan, at a height of 3,900 feet, I had an excellent view of the snow, and found that as many as five drifts were still remaining. On the way down to visit the lowest I had the good luck to watch, for some time, a stoat running round among some rocks, apparently quite unaware of my presence. A flock of ptarmigan soon afterwards rose quite near him, and very beautiful did they look as they sped across the deep corrie of Loch Avon, and reappeared in the sunlight on the slopes of Cairngorm. The three lowest snowfields were arranged in the form of a triangle. They were at an approximate height of 3,500 feet above set level, and faced north-east. The one I visited was perhaps 50 yards across and some 10 to 12 feet in depth. It had its bed on a rock, and, like the field on Braeriach, was lying at a very steep angle—so much so that it was very difficult to obtain a footing on it. On the surface of the snow were the fresh tracks of ptarmigan and mice. The temperature was considerably below the freezing point, and a thin covering of freshly fallen snow lay on the field; but in spite of this, and the fact that icicles several inches thick covered the rocks, the snow was melting from beneath, and the water, as it dripped down, was forming icicles on the lower surface of the wreath.

The most remarkable feature found in connection with the snowfields was that in every case plant life, in the shape of mosses or lichens, extended right up to the extreme margin of the snow, and where the latter had melted away from the rocks the plants could be seen actually growing beneath. *Saxifraga stellaris* was found growing not very far from the

snow, and in some cases it had not been uncovered for a sufficient period to form flowers. Grasses of various kinds were also found, but they did not extend to the margin of the snow. After examining the three lower fields, I proceeded to a couple of large snow beds about a quarter of a mile to the south-west, and facing almost due east. The largest of the drifts was found by the aneroid to be 3,700 feet above sea level. It was by far the most extensive I had seen, and was quite 100 yards long by 60 broad. The depth must have been close on 14 feet, and the remains of a cornice were still present. Another field alongside it was some 70 yards in length, and at one point only a very thin snow bridge covered a burn running through the drift. The fact that in every case moss was found up to the extreme edge of the snow, and that even when the latter was broken moss plants were found beneath its surface, seems to prove that in certain years the snow actually does disappear, though it says much for the hardiness of the moss that it can remain buried for so long without its vitality being impaired. Besides the snowfields mentioned, there is an extensive wreath on a north-eastern corrie between Ben Muich Dhui and Cairngorm, which I was unable to investigate at close quarters, though there was an excellent view of it from the high ground between Grantown-on-Spey and Tomantoul. The study of these snowfields is an intensely fascinating one, and a series of observations taken at the fall of each year should in time produce interesting results.

CHAPTER XXIII

THE GOLDEN EAGLE AND ITS NESTING

It was feared, a few years ago, that the numbers of the golden eagle were diminishing at its last strongholds among the Scottish highlands, but, fortunately, these fears have proved groundless, and it is pleasant to be able to state that this dauntless bird of prey is quite holding its own; in fact, I should say that its numbers are, if anything, on the increase at the present day in the deer forests of the north. This pleasing fact is undoubtedly due to the unselfish manner in which some of the largest Scottish landowners have afforded the eagle the strictest protection, and have willingly sacrificed a few brace of grouse in the interests of one of the most noble birds of prey of the British Islands.

The golden eagle may be said to be confined to the counties north of Perthshire, though during the winter months stray individuals are met with much farther south, and, in fact, have been obtained in various English counties. It is essentially a Highland species, however, and I do not know of any eyries at a less height than 1,200 feet above sea level. Many of the eagles nest at far greater altitudes. The highest eyrie that I can call to mind at the present moment was built in a lofty precipice at a height of some 3,500 feet above the level of the sea, and was facing almost due north. Notwithstanding its exposed nesting sites, the mountain eagle is a very early nester, and the hen is sitting on her eggs before any other bird of the hills has even thought of family cares. In the case of the more sheltered eyries—those below the 2,000 feet level—the birds often commence nest-building before January is out—I have seen them on January 27 carrying large branches to the eyrie—and by the middle of March the hen is usually brooding. The higher eyries are often hidden in snow till early April, but directly

the snowy covering has disappeared the birds begin to nest, and the eggs are laid—at the very latest—by the third week of the month. The position of the eyrie varies, but, with one exception, I have seen only two kinds of nesting places utilised—a ledge of rock or an ancient Scotch fir. It is difficult to say which of the two nesting sites is the more favoured. I incline to the belief that the eyries are very evenly distributed. Each site has its own advantages. Those eyries built on trees are less likely to be snowed up during a spring snowstorm, while a ledge on a rock offers, perhaps, a more secure foundation. If anything, I should say that an easterly outlook is the one preferred, though it is possibly more by accident than anything else that the majority of eyries I know of have this situation.

When constructed in a tree, the nest often assumes very ample proportions, as it may be used for many years in succession, but after having reached a certain size it often collapses during a winter snowstorm, breaking down, perhaps, in its fall, a considerable part of the tree in which it was built. A few years ago two eyries within a few miles of each other were broken down by a heavy fall of wet snow. One of the nests was of comparatively recent construction, but the other had been occupied for at least fifteen years in succession, and was quite six feet in diameter. I have recently noted that in many instances a pair of eagles have two eyries within a few hundred yards of each other, or even less, and they not infrequently make use of them alternately. Another interesting point is their habit of decorating these temporarily unused nests with green fir shoots—probably as a warning to other eagles that the eyrie already possesses an owner. Externally, the nest is composed of branches, often of considerable length and weight, and is lined with tender shoots of the fir, which the eagles invariably break off the parent tree. The birds are extremely partial to these young fir branches, and a short time ago I was interested to see a number of them in an eyrie situated a considerable distance from the nearest fir wood. In addition to fir branches the nest may be lined with a wood rush—*Luzula sylvatica*—and sometimes with shoots of the crowberry (*Empetrum nigrum*). I have at times found branches of

EYRIE OF THE EAGLE IN A SCOTS FIR QUITE 200 YEARS OF AGE

juniper in the eyrie, and in one instance, after the eaglet had been hatched, the parent birds brought almost daily fresh shoots of the raspberry to their home, evidently for decorative purposes.

The eggs usually number two; clutches of three have been found, but such instances are very few and far between. The eggs are of a dirty white ground colour, and are speckled more or less with rich red-brown markings, these markings usually, but not always, predominating at the larger end of the egg. Of a clutch, one egg is normally much more richly coloured than the other, and this egg is said to contain the male bird. The second egg may be almost devoid of markings. The shell is remarkably thick, and the egg can stand a considerable exposure to cold, though it is always risky to flush the eagle from her eyrie on a cold and stormy day, for we have known of this being done with disastrous results to one of the eggs. The period of incubation is a lengthy one—some forty days—and the brooding eagle may have the wildest weather to defy.

During the season of 1910 we had under observation an eyrie built on the outskirts of a fir wood at a height of just under 2,000 feet above sea level. The eggs were laid early, and by April 30 the solitary eaglet—one of the eggs had mysteriously disappeared during the process of incubation —seemed to us to be quite a week old. A cock grouse—freshly plucked and quite warm—was lying in the eyrie, and served to shelter the eaglet from the cold north-easter which was sweeping up the glen. The parent birds betrayed great anxiety and continually soared over the tree. Ultimately they crossed to the farther side of the glen and alighted on the heather near the sky-line. Here they remained till we had left the vicinity of the nest, when they rose almost simultaneously, and seemed, from our somewhat restricted point of view, to bear straight down towards the eyrie. Our next visit to the eaglet was on June 24. The day was a stormy one, and against successful photography, a north-east wind bringing with it heavy showers of rain and sleet. The eaglet, we found, had developed into a fine healthy bird, and had already left the eyrie—temporarily, at all events. From its small size we surmised it to

be a cock, but when there is but a single eaglet in the nest identification is somewhat difficult. He was standing in some fir branches beyond the eyrie, and, on our climbing the tree, retreated to a precarious position, being swayed backwards and forwards by the strong wind, and very nearly overbalancing himself on more than one occasion. We succeeded in obtaining a series of photographs of him in characteristic attitudes, and then left him in peace for the time being. Our next visit to the eyrie was on July 10. The day was very bright and the heat intense, though a cool breeze blowing up the valley brought some relief. On approaching the tree in which the eyrie is built, we could discern no traces of the eaglet, and had begun to imagine that he must have flown, when we noticed a movement amongst the outlying branches of the tree. A moment or two later the eaglet flew out strongly, and, helped by the following breeze, headed straight up the glen and disappeared from sight round a bend in the strath. For a bird taking his first flight he was extremely strong on the wing, and, except for an occasional difficulty in balancing himself, flew almost as gracefully as an adult bird. On rounding the ridge over which he had disappeared from sight, we spied the hill-side for a considerable time before locating the fugitive, but ultimately marked him amongst some long heather. As we approached he again took wing, and flew quite 100 yards up the glen, alighting on some burnt heather, and walking solemnly down towards the burn at the foot of the corrie. We succeeded, after careful stalking, in getting to leeward of him, and approached quite near without his being aware of our presence. A missel-thrush in the vicinity strongly resented his intrusion, and was soon joined by what was probably its mate. The new-comer made a vicious swoop at the unoffending eaglet, without, it must be admitted, disconcerting the larger bird in the least, and then flew off and remained watching at a respectful distance. The eaglet gradually made his way down to the long heather fringing the burn, and in doing so sadly frightened a teal duck which was swimming in a deep pool. The teal probably had young in the vicinity, for she swam round in a most excited state, quacking piteously the while. The wind had now dropped, and the eaglet was

quite unable to rise from the burn-side, though making several determined efforts to do so. We took a number of pictures of him, one of which shows him resting on his wings upon some very long heather. One of his short flights landed him in the burn, in water well out of his depth, but he easily crossed on the surface of the water, propelling himself with powerful wing-beats (see facing p. 66). During all this time no signs of the parent birds were visible, though they were probably watching us from one of their points of outlook.

Earlier in the season we had made several expeditions to the eyrie for the purpose of photographing the hen eagle as she left the nest, and with some considerable success. On one of our visits the eagle scented danger, and left the eyrie while we were still a couple of hundred yards distant. We immediately sought the cover of a tree, and the eagle, after mounting to a great height and scanning the glen in every direction, apparently came to the conclusion that her alarm had been unfounded, and returned confidently to her nest. We gave her a certain amount of time to regain her composure, and then succeeded in getting within a few yards of her and obtaining a successful photograph as she rose from the eyrie. On another occasion we endeavoured by every means to make the bird rise from the nest so as to obtain a photograph, but without success, and had come to the conclusion that the eagle must be off feeding, when we were surprised to see her put her head over the side of the eyrie and glare fiercely at us, without, however, making any effort to rise. We found later on that she was guarding a newly hatched eaglet.

A young golden eagle takes a considerable time to come to maturity. Though many of the eggs are hatched out before the advent of May, we have never known the eaglets to take flight before July 5. Very often they leave the eyrie during the second or third week of the month, and have been known to be still in the nest on the advent of August. During their early days the parent birds are careful to feed the eaglets on only the most tender parts of grouse and ptarmigan, but later on rabbits and hares are allowed them. The remains of the most unlooked-for animals are sometimes found in an eyrie. We have seen relics of a squirrel, of a stoat, of a

small bird about the size of a chaffinch, and even of an unoffending field vole. Even when the eyrie is in the heart of the ptarmigan country, grouse seem to be preferred as an article of food. After venturing forth on their first flight, the eaglets are instructed in the art of hunting by their parents, but after a certain time these same parents, who reared and tended them so affectionately, turn fiercely against their offspring and drive them out from the glen to make a way for themselves in the wide world.

* * * * *

There is something supremely fascinating in studying the king of birds during the early spring months, when he and his royal mate are busy with the cares of nesting. Unlike other birds, which are dependent on the weather for the rearing of their young, the eagle can bid defiance to the heaviest snowstorm, and every year constructs or repairs her eyrie, and lays her two eggs, regardless of whether the preceding weeks have been cold and snowy, or whether soft winds from the south have begun to melt the snows of the higher mountains. The building or repairing of the eyrie is carried out during the first two months of the year, and the nest is ready for eggs by the third week in March. Where the nest is situated on a ledge of rock the eagles have perforce to wait until the winter's snows have disappeared from their nesting ledge, but where the eyrie is situated in a tree no such delay is necessary, and the hen may brood on her eggs with an average depth of three feet of snow covering the hill-side.

On March 27, 1910, we paid a visit to a glen where for many years a pair of eagles have had their home. Four years before the young were hatched off safely, but the following season the eggs mysteriously disappeared, and for the next two years the eagles nested in an eyrie which was not discovered. The day we chose for our expedition dawned unfavourably with heavy clouds on the hills, and as we made our way up to the glen snow was falling in soft dry flakes. Soon, however, the sun, as a veteran stalker of our acquaintance quaintly put it, "gained the masterpiece," and the day was an ideal one ere we reached the haunt of the eagle. We soon had a glimpse of the cock bird; he was sailing gracefully overhead, and seemed to be ordering a too audacious heron

EYRIE OF THE GOLDEN EAGLE IN A BIRCH TREE

off the premises. Heron and eagle sailed about for some time, the heron appearing almost as graceful as the king of birds himself, but the fisherman soon thought discretion to be the better part of valour, and sailed away in an easterly direction.

We surmised from seeing the eagle alone that his mate must be sitting somewhere in the vicinity, and after examining without success a couple of eyries which have been tenanted from time to time during the last few years, reached a tree which the eagles have tenanted for half a century and more. Feathers around the sides of the eyrie were considered a hopeful sign, and sure enough we soon had the satisfaction of seeing the eagle flap clumsily off the nest and sail round in ever-widening circles until she had reached a great height, when she flew off to the west, and was soon lost sight of behind a hill. On ascending the tree I found two eggs in the eyrie, one well marked with reddish-brown blotches and the other comparatively white. It has been stated that the more conspicuously marked egg contains the male bird, and certainly a male and female bird are always hatched.

The eyrie was some three feet in diameter, built, to the outside, of substantial fir branches, some several feet in length, while towards the centre green fir branches, freshly pulled from the trees, made up the bulk of the nest. The eggs were lying in a soft bed of dry grass, and the eyrie was in a scrupulously clean condition—no remains of hares or grouse being visible. As far as my experience goes, the eagles never bring food to the eyrie before the young are hatched, but use a spare nest as a larder, depositing in it the remains of grouse, hares, etc., to be devoured when occasion arises.

A few days later I again visited the eyrie to attempt to photograph the eagle leaving the nest, but on approaching the eyrie hid myself for some hours behind a tree in the hope of noting the behaviour of the hen bird. The grouse were in the vicinity of the eyrie in large numbers, and I feared lest their continued crowing might disturb the eagle. After having the eyrie under observation for some time, I saw the eagle leave the nest, and alight in some long heather about fifty yards away, causing the greatest excitement among the neighbouring grouse, which rose in a cloud, and vanished over the crest of the hill. Whether the eagle had attempted

to capture one I was unable to determine; at all events she almost immediately rose again, and, soaring to a great height above the eyrie, swooped down into it with half-closed wings. Approaching the tree quietly I got my camera in focus, and then whistled softly. The eagle must have been dozing, as she suddenly roused herself at the sound and put her head over the side of the nest to investigate. She then clambered on to the edge of the eyrie, and launched herself out on the air, sailing off down wind with never a movement of her wings and with every feather clearly outlined in the strong sunlight. Unfortunately the photograph I took of her was rendered useless by the shutter not working sufficiently fast, and so a few days later, accompanied by a friend, I visited another eyrie in the heart of the Cairngorm mountains in the hope of being able to secure a more successful snapshot.

The day was an ideal one, albeit the wind which swept off the snow-covered mountains was a trifle keen. Our way led first through a wild glen with straggling birch trees covering the hill-sides to a height of close on 2,000 feet, but we soon reached the open moorland, and had a most magnificent view of hill after hill stretching away to the horizon, all covered with snow, and with deep cornices fringing their corries. Before us was the Glen of the Eagles, where from time immemorial these noble birds have reared their young, and we could not but help considering how suitable in every way was their nesting ground. Giant pine trees grew up the glen for a considerable distance, and in one of these trees the hen eagle was patiently brooding on her eggs. As is usually the case with the king of birds, the eagles in this instance are not content to rest with one eyrie, but have two nests within a hundred yards of each other. The lower of these eyries is almost on a level with the burn which flows through the glen, and is in a beautifully sheltered situation, although at the same time commanding a wide outlook. The previous season the upper eyrie was used by the eagles, and in it they successfully reared their young, but during the winter the nest was tilted on end, probably by a heavy snowfall or severe gale, and thus the eagles have repaired their second eyrie. Both eyries, as far as can be judged, are quite half a century old,

and lying at the foot of the trees are the remains of still earlier nests, with moss growing thick and luxuriantly on them.

The eyrie tenanted by the eagles at the time of our visit was an offshoot of a former one, the remains of which could clearly be seen adjoining the occupied structure. It was built on a large and exceptionally strong branch at a height of some 25 feet above the ground, and in such a position that it was as firm as a rock even during the strongest wind. We neared the eyrie with extreme caution, making a wide detour and approaching it from beneath. When about thirty yards distant we levelled our cameras at the nest, and whistled cautiously, with everything in readiness to photograph the bird when she sailed off. But no signs of life came from the eyrie, and after shouting vigorously for some minutes one of the party went up to the tree and threw several missiles up at the nest, with varying degrees of accuracy. This having produced no effect, we came to the conclusion that the hen was off feeding, or that possibly she had deserted her eggs, but in the midst of a discussion as to the advisability of attempting to scale the tree—no light undertaking—and making certain, the eagle suddenly shot off the eyrie at express speed. She, of course, took us quite unprepared, and so a magnificent opportunity of figuring her as she left the nest was lost.

Another interesting expedition was made to a nesting site of a pair of golden eagles, where the birds repair the eyrie every year to a certain extent, but comparatively seldom actually lay their eggs there. In 1910, however, the eyrie was liberally repaired with green juniper branches—freshly pulled—so on April 22 the locality was revisited, in the hope that the hen would be found to be brooding. The eyrie in this instance was built on a narrow ledge of rock on a small precipice, and was supported to a certain extent by the roots of a struggling mountain ash. The narrow gorge where the birds attempted to nest is the only suitable locality for miles around, and were it not for the fact that it is situated on a productive grouse moor would be an ideal spot for the eagles. As we made our way up the hill-side, thick with juniper bushes, bird life was met with in abundance. All around us the vibrating call notes of the curlew fell

pleasantly on the ear, mingled at times with the plaintive pipe of the golden plover, while grouse were constantly rising at our feet, and an occasional ptarmigan was also met with. Soon we had a view of the male eagle soaring over the gorge in the teeth of a strong northerly wind, and after a stiff climb we at length reached the rock where we hoped to find the female bird brooding. Our expectations proved to be well founded, for on looking over the edge of the rock the eagle was seen sitting on her eyrie, and on hearing us soared across the gully on outstretched wings. There were two eggs in the nest, and one of them was beautifully marked and blotched with dark red, while the other—the lighter coloured of the two—was half-buried in the eyrie. All around the nest were the remains of a recent snowstorm, and at this height the temperature was little, if any, above freezing-point.

The eyrie presented unique possibilities for the photographing of the sitting eagle, and so a couple of days later a second expedition was made to the eyrie to see what could be done in that direction. The weather was ideal during the climb, the distant hills standing out with extraordinary distinctness, but just as the eyrie was reached hailstones of enormous size began to fall, so we resolved to wait till the end of the shower before attempting to photograph the eagle. The hail, however, fell with great persistency, and soon the wind veered round to the north and blew a gale, while to make matters worse the hail changed to dry snow, and shortly we were covered to a depth of several inches. We at length determined to attempt a photograph at all costs, but on peering cautiously over the cliff I saw an empty eyrie, or rather, to be exact, an eyrie eggless, but half-full of drifted snow! The nest had been robbed, and thus again our effort came to an unsuccessful termination.

Another eyrie which we visited several times during the same season was situated in very different surroundings. We had our first view of the eaglet on Midsummer Day, in ideal weather conditions.

There had been thunderstorms almost daily, so a very early start was made, and ere we had left the stalker's house well behind us we had a splendid view of both the old birds as they soared over the hill-side, finally separating and making

GOLDEN EAGLE SUPPORTING HIMSELF ON HIS WINGS IN LONG HEATHER

off in different directions. The eyrie was situated at an elevation of close on 3,000 feet—considerably higher than is usually the case—and we had a capital view of the eaglet preening herself in the morning sunshine. The eyrie was on a ledge of rock, and ultimately was reached with little difficulty, though it was some time before we could find an approach to it.

The eaglet—she was a young hen—was exceptionally gentle in her disposition, for she allowed us to handle her without protest, but on the least provocation lay flat down on the eyrie as though in great alarm. We found a freshly killed grouse in the eyrie, and, curious to relate, several raspberry shoots, freshly pulled, and a green bunch of juniper. The photograph, facing this page, shows the eaglet with the grouse beside her, and it was only with difficulty that we persuaded her to stand while the plate was being exposed. In the vicinity were the remains of three other eyries, in one of which were the bleached bones of some animal—in all probability a mountain hare.

Our next visit to the eaglet was at 4 A.M. on a perfect July morning. As we reached the ridge and looked across to the corrie beyond, no signs of the eaglet were visible. The mother eagle, it is true, had flown out from the rock, but the young bird was certainly not in the eyrie. Ultimately, however, she was discovered standing in the long heather some fifty yards from the nest, and, as the weather had latterly been intensely hot, she had probably left the eyrie to look for cooler quarters. A grouse, killed the evening before, was lying at her feet, but was as yet untouched.

We obtained some extremely good photographs of the eaglet in different attitudes. There were in the vicinity numerous meadow-pipits and wheatears, and these at times made attempts to "mob" the eaglet. When the small birds approached she crouched low in a most curious position, as though she thought her tormentors were most formidable adversaries, and the photograph facing p. 60 shows clearly her attitude of self-defence. The last occasion on which we saw her was on July 22, a day with a good deal of mist on the hill-tops, and when photographing was made difficult owing to a downpour of rain.

We found the eaglet had wandered quite 100 yards from the nest, and was looking very bedraggled and miserable in the wind and rain. We got within ten yards of her by careful stalking; but at this point she suddenly spread her wings and soared out over the rock with wonderful ease, considering that this was in all probability her first flight. We marked where she alighted, and succeeded in obtaining some interesting photographs, one of which (see facing p. 123) shows clearly the raindrops glistening on her back. As a matter of fact, directly I erected my camera she seemed to recognise an old friend, and when I wished to obtain a snapshot of her rising from the ground she resolutely refused to move an inch, in spite of my wildest gesticulations. Ultimately she began to walk off in a most stately and deliberate manner, and did not take wing until she had progressed some distance. Then she suddenly shot out into the mist, and was almost immediately lost to sight.

A most amusing, though fruitless, expedition was made about this time to an eyrie containing two eaglets, situated on a rock of some considerable height. We had the assistance of a stalker and two shepherds, who carried between them a heavy coil of rope to let one of the party down to the eyrie. The stalker enlarged, as we toiled up the hillside, on the prowess of the two shepherds as rock climbers; but when the summit of the hill was reached and a very steep and rocky descent faced us before the rope could be brought into use, one of the shepherds suddenly remembered that he had left his "tackety" boots behind, and so the party, now reduced, commenced a somewhat precarious descent.

After we had proceeded only a few yards, however, the remaining shepherd suddenly dashed back and lay behind a rock, having, as the stalker quaintly remarked, "got a bad attack of the dizzy." My friend and the stalker, who, although very nervous at the start, had become more and more cheerful as the dangers increased, managed to reach the grassy slope where the rope was to be brought into use, and the stalker and myself, braced against a rock, let my friend down at the end of the rope, with no small misgivings, as we were somewhat doubtful of our ability to hold him at a crisis. He came up again safely, however, but without having located

the nest, and though the stalker also descended, he met with no success, for the eyrie, being built under an overhanging rock, was very difficult to locate, and so we reluctantly returned to where the shepherds anxiously awaited our arrival, being loud in their praise of what they considered a magnificent performance.

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In the season of 1912 golden eagles of our acquaintance were singularly unfortunate in their nesting operations. Favoured with an open spring and an almost complete absence of snow, even on the high grounds, the eagles were early repairing their eyries, and by the closing week of March were, for the most part, brooding on their eggs. On March 25 we visited an eyrie in one of the wildest glens of the Highlands, and even at that early date the mother bird was sitting so close that we remained to watch her on the nest at a distance of less than 100 yards, and that without disturbing her in the least. It was on March 22 that we found the first eyrie in occupation. Situated in a sheltered glen, this particular eyrie is always one of the first to be tenanted, and we have known of a young bird being hatched by the third week in April.

On the occasion mentioned the mother bird was either not at home or else had seen us from a distance and had slipped quietly off the nest. At all events, when we reached the eyrie there were no signs of life, and it was only on seeing a particle of down adhering to the edge of the nest that we decided on climbing the tree—to find two eggs, quite warm, reposing in the eyrie. As is almost invariably the case, one of the eggs was richly coloured with blotches and spots of a warm red-brown tone, while the other was entirely devoid of markings, and its grey-white ground colour was quite unrelieved.

Another eyrie which we visited during the closing days of March was placed in an ideal nesting site—under a ledge of rock at a height of some 2,200 feet above sea level. As we neared the nest—after a very stiff climb through long and rank heather—a violent storm of snow swept down upon us from the west. So great was the strength of the wind that it was some minutes before the snow reached us in our comparatively sheltered quarters, for the storm was driven over

the hill-top with such force that it was only after much delay that it was carried up to us on a back-eddy. In this instance also the eagle slipped off her eyrie unseen by us, for we were of opinion that it was unoccupied until we were near enough to see into the cave, when we found that the eyrie contained two eggs, rather small in size, and one of them very prettily marked.

The eyrie was, as we have mentioned, in an ideal position, and had been occupied for many years, but a fortnight or so after our expedition was overtaken by a sad fate. The stalker on whose beat the eyrie was situated was of opinion that the heather on the hill-side was too rank to yield the best results to the stags, and mentioned that, if the weather were suitable, he intended to fire the whole hill at the first opportunity. We ventured to remark that the eyrie would be in a somewhat precarious position if this were done, but our friend, with a cheery optimism which was not borne out by results, was quite certain that the fire would be unable to find its way up the rock. On a warm and sunny day, therefore, the hill-side was lighted, and from our point of vantage, a few miles to the eastward, we could see a dense pall of smoke enveloping the whole hill and quite obscuring the light of the sun. The fire, evidently, was burning with great fierceness, and we were not without anxiety as to the safety of the eyrie. Towards sunset, when the fire had nearly burnt itself out, we visited the scene, and turned our glass on to that part of the hill-side where we knew the eyrie to be situated. The familiar heap of sticks, however, was no more to be seen, but on looking more closely we became aware of a thin wreath of smoke ascending from one particular part of the rock. We had our suspicions, but, hoping against hope, climbed the hill—to find a smouldering mass of ruins, in which lay pathetically two scorched and blackened eggs! Of the parents birds we saw no sign; evidently they had realised the hopelessness of the case, and had taken their departure from the district. The eyrie situated in the Scots fir—to which reference has already been made—also had its share of misfortune.

Towards the end of April we paid it a second visit, hoping to obtain some photographs of the newly hatched young, but to our disappointment found that the eggs had disappeared,

and that the eyrie was half-full of pine needles and small branches. In this case we saw what we imagined to be the owner of the eyrie shortly afterwards. We had entered a narrow glen with birches straggling up one of the steep hill-sides when we became aware of the fact that we were causing great uneasiness to a pair of merlins which had apparently chosen this secluded spot for the purpose of rearing a family. At all events, these little hawks showed signs of the greatest anxiety, flying restlessly round us, and from time to time alighting on a birch tree or on a little knoll on the hill-side. Soon a small speck appeared on the sky line, resolving itself later into the form of a golden eagle, soaring towards us at a very great height. Just after passing overhead, however, the eagle swooped to earth with great suddenness, though we were unable to see, on account of the intervening hill, whether his stoop had been rewarded by success. Soon he reappeared to view, only this time flying at a much lower elevation, and with a corresponding loss of dignity. On his previous appearance the merlins had taken no interest in the intruder, but his return was the signal for a combined attack on their part. Beside the quick and determined dashes of his small opponents, the flight of the eagle seemed almost laboured, and certainly he was no match for the merlins in their fearless and resourceful tactics. Under these somewhat aggravating circumstances he behaved precisely as an eagle does when mobbed by a number of hoodie crows—that is, he completely ignored his small adversaries and continued proudly on his flight. Amongst birds of its size we should say that the merlin is without equal for its buoyancy and grace of flight, and it has often reminded us of an overgrown swift—which, after all, is the greatest compliment one can pay to any bird!

In 1911 a pair of eagles had an eyrie, and successfully reared their young in a birch tree in a Highland glen of our acquaintance. The choice of a nesting site was a most unusual, if not an unprecedented, one, and so we revisited the glen during 1912 to ascertain whether the birds had returned to their former nest. In this instance, again, we were disappointed. The eyrie had certainly been repaired in a perfunctory manner, but it was evident that it was not destined for eggs. It was, therefore, with great pleasure that we

discovered, by the aid of the glass, a second eyrie newly built, or, at all events, carefully repaired, on a ledge of rock near the deserted birch. Here, we thought, must be the occupied eyrie; but we were disappointed, for the nest, although freshly lined with heather and a single green fir branch, contained no eggs. After prolonged and careful searching we discovered a narrow gorge running at right angles to the main glen—where numerous eagles' feathers were adhering to the birches. At first we surmised that we had discovered the nesting site, and it was not until we came across a solitary fir tree that we realised our mistake. This unfortunate tree, as being the sole specimen of its kind in the district, has received particular and unwelcome attentions from the eagles. All over the tree we saw jagged ends of broken branches, and the numerous feathers and pieces of down in the vicinity showed that the birds had paid many visits to this representative of *Pinus sylvestris*. It is well known that the branches of the Scots fir are in great demand for the construction, and especially for the lining, of the eagle's eyrie, so it is quite possible that several pairs of these birds had paid visits to this particular tree.

In yet another case an eyrie of our acquaintance had ill-luck during 1912. Situated on a ledge of rock at a height of some 2,700 feet above sea level, the eyrie was ready for eggs early in April, but we have every reason to suspect that the nest was robbed; at all events, as late as April 26 the nesting site was quite deserted, although we saw, on our return to the low grounds, the two eagles shooting down at express speed towards the corrie where their home was situated. Although the parent eagles were in the neighbourhood of the nest till late in May and added fresh material from time to time, the hen did not, so far as we are aware, lay in the eyrie.

Of all the eyries of our acquaintance, in only one instance in 1912 did success attend the efforts of the mother bird. The nest—which we mentioned earlier in this chapter—is placed in a very old fir tree which the eagle and her ancestors have tenanted for countless seasons. The eagle, even at the commencement of incubation, sat very closely, and it was with the idea of photographing her as she left the nest that we made an expedition to the eyrie one bright, sunny afternoon. The mother bird we found sitting quietly on her nest; so, having

NESTING GLEN OF THE EAGLE

GOLDEN EAGLES; AT BAY

watched her for some minutes at a distance of rather less than 100 yards, we walked up and stood close to the tree, expecting to see the eagle soar off at once. To our surprise, however, she sat quite confidently awhile, then slowly and solemnly rose from the nest, walked to the edge of the eyrie in a stately manner, and threw herself out on to the still evening air. And now a yet more extraordinary thing happened. Instead of flying straight off, as the eagles of our experience had hitherto done without exception, this fearless bird actually alighted on a tree near, and then, after a few moments' rest, ventured still closer, taking up her station on the top of a fir tree not 100 yards from us. There she remained for some time, a striking and unusual object, searching the glen on every side with quick and eager glance for the appearance of her mate. The latter, however, was evidently hunting afar, and soon the hen began to speak, as it were, to herself in curious, liquid, babbling notes repeated with great rapidity—"wow wow wow wow." The notes were quite unlike anything we had ever before heard an eagle utter, though we admit that it is very exceptional to study the "king of birds" at such close quarters, and it was with disappointment that we saw the eagle rise from her perch and fly leisurely across the corrie—to take up her watch on the farther hill-side.

CHAPTER XXIV

WINTER IN THE PTARMIGAN COUNTRY

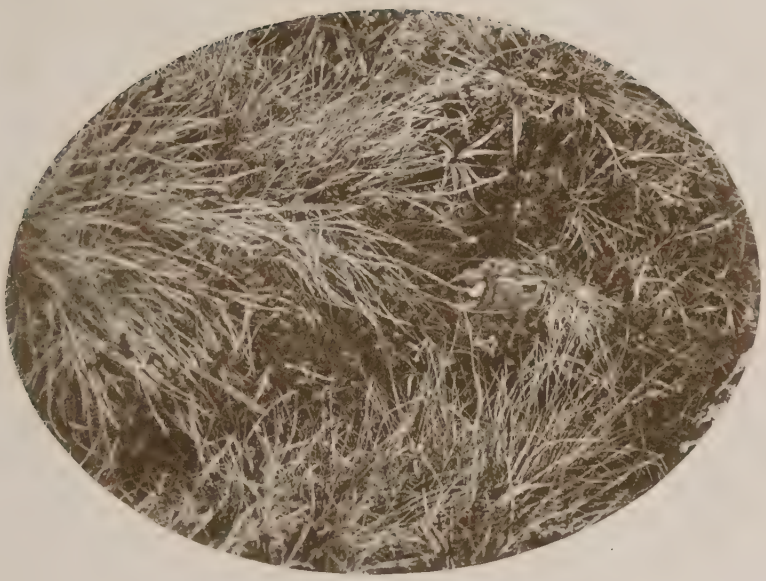
TOWARDS the end of November, when autumn has yielded to winter on the heights, the lonely mountains have a great charm for the Nature-lover, and the difficulties to be overcome ere the hill-top is gained serve only as an added incentive. Starting from your base ere the sun has scarcely risen above the horizon, a twenty-mile motor run brings you to the neighbourhood of Lochnagar, the corries of which Byron loved so well, and which he has described in his poem "Dark Lochnagar." At the Allt-na-giuthasaich ("the burn of the fir wood") the path up the hill strikes off from the road, and for a considerable distance is a clearly defined track, losing itself later among the snows which envelop the upper reaches of the hill from November till May. A hard frost prevails, and many of the smaller burns are running beneath the ice, while the last golden needles of the larches are strewing the way. On emerging from the wood you note that the southern spur of Lochnagar, which bears the name of Cuithe Crom ("the hill of the crooked snow wreath"), is mist-capped, the morning sun striking on the snow and mist with wonderful effect. Scarcely a breath of wind is there, and the grouse rise startled at your feet and settle, crowing loudly, on the farther side of the burn. In the distance a solitary hind is seen making her way along the sky-line, and a peregrine comes soaring leisurely by. Soon you pass a deep gorge at the head of the burn, where a few years ago a pair of eagles built their eyrie and hatched their young. The nest, however, was discovered by some youths, who carried the eaglets away. Luckily a stalker got to know of this almost immediately, and compelled the boys to replace the chicks, none the worse for their enforced absence. The parent birds reared them in safety, but have not since returned to this nesting site.

As the watershed between the rivers Muich and Dee is eached, a remarkable view of the eastern Cairngorms is btained. Ben Avon, with the giant rocks on its summit, is otiessly white, the rocks standing out black as night. Eastards the Hill of the Brown Cow already bears the snow reath known to the natives as the "Brown Cow's White Calf." his drift towards the end of winter may reach the depth f close on 100 feet, and often lies on the hill until August. he path you have been following, which hitherto has led orthward, now at the watershed changes abruptly to almost lue west, and you see before you the Cuithe Crom, over hich the track leads in a zigzag course known to mountaineers s "the Ladder." At a height of 2,500 feet you reach the snowine. At first only a sprinkling covers the ground, but graduilly the depth increases, until you are walking in an average lepth of six inches at least. It is noticed that there are two lifferent layers of snow covering the hill, the lower hard and alf-melted, the upper soft and powdery, and a good deal of caution has to be exercised, as the crevices between the oulders are treacherously concealed. For some time you have eard the mournful croaking of the ptarmigan in the distance, nd now you come upon a pair so tame that they pay but little ttention to your approach, and allow you to get within a few ards of them before taking flight. Although nearly white, hey have not as yet assumed their full winter plumage. The pot appears to be a favourite feeding-ground, and ptarmigan, ne after another, rise either singly or in pairs. Then suddenly on either side two large packs, each consisting of about hirty birds, suddenly rise, and beautiful indeed do they look s they fly off to the upper reaches of the hill, their snowy plumage glistening in the sunlight.

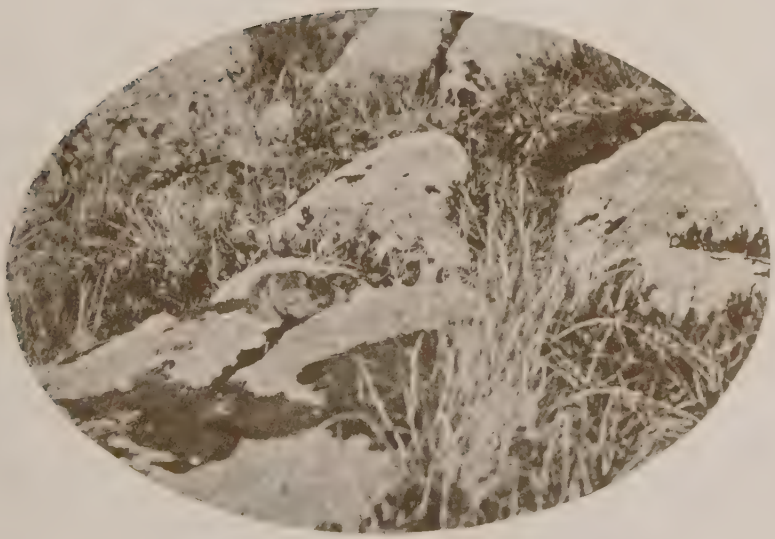
The hills to the east have gradually been obscured by a mist, and as you reach a point from which the loch of Lochnagar is first seen, the cloud descends on the hill, blotting out everything over 3,000 feet with its white vapour. The loch itself is grand in the extreme as it is dimly viewed through the mist, but a sudden rift in the gloom shows it up sharp and clear, its black waters, from which thin columns of steam are seen slowly ascending, forming a striking contrast to the snow all around. A thin layer of ice is seen to be

forming in places, but, as is evident from the steam, the water of the loch has not yet cooled down to the temperature of the surrounding atmosphere. Although the thermometer is many degrees below freezing, and one's moustache is frozen hard, still there is an almost complete absence of wind, and the air feels strangely mild. Lunch is now taken in the hopes of the mist rising, and a bottle of ginger beer, which was brought up with much labour and placed in an apparently secure position, suddenly begins to slip downhill, and, despite all efforts to arrest its progress, slides down the hill-side with ever-increasing velocity, until it finally finds a resting-place somewhere beside the loch, nearly 1,000 feet below. After lunch, the mist clearing slightly, you push on to the summit plateau, encountering a deep snow wreath which was formed by a severe snowstorm in October, and which will now, in all probability, remain till May or June. A luckless fly is found lying dead on the surface of the snow, and here and there are the tracks of a mouse, while footmarks of the white hare and fox are common. Suddenly, in the distance, a dark object shoots through the air. It may have been a peregrine, but in all probability a golden eagle was taking his toll of the ptarmigan.

The summit plateau of Lochnagar commences at an elevation of about 3,400 feet. From here a wonderful view unfolds whenever the mist lifts. The plateau carries practically no snow, but every object is thickly coated with ice, showing that a storm of rain was immediately followed by a touch of frost. On the ice are wonderful crystals, mostly resembling a variety of seaweed. On every stone these are found, and they all bend towards the south-west. On some of them tiny crystals have formed at a later date, and it is difficult to realise that they are not endowed with life, so plant-like do they appear. The sun shines dimly through the mist like a large yellow ball of fire, and while to the east the mist is of a bluish colour, near the sun it is transformed to an orange tinge. At times the clouds rise from the plateau, but even then they are seen rolling over the lower heights with fine effect. Away down by the Dee a thin haze rests, but it can be seen that a considerable area of the oats is still in the fields. Looking over the precipice's



YOUNG PTARMIGAN CROUCHING



YOUNG PTARMIGAN—SHOWING ITS WONDERFUL HARMONIZATION WITH ITS SURROUNDINGS

edge, you might be looking into eternity, as all below is swallowed in mist—cold, impenetrable mist; and although you are aware that the loch is lying 1,000 feet beneath you, it is completely shrouded in the gloom. In a mist such as this it is well to know the ground thoroughly, as—a false step or two—and a sheer precipice awaits the mountaineer who has lost his bearings. As you wend your way once more to the lower grounds the sun is tinging the snow-capped hills with a rosy hue, and Loch Muich lies in its deep basin, the sinking sun lighting up its waters a dark gold. A mallard duck and drake rise from the burn before you, and as twilight comes on the call of the grouse as they settle down for the night is the only sound to disturb the stillness of this winter evening. By and by the moon rises and all the valley is lit up by her golden rays. All nature sleeps.

CHAPTER XXV

ANCIENT MOUNTAIN WOODLANDS IN SCOTLAND

DURING our somewhat extensive wanderings on the Upper Deeside mountains, and especially on the Cairngorm range, we have constantly met with the remains of ancient woodlands, composed almost entirely of Scots fir (*Pinus sylvestris*), extending to a height considerably greater than that to which our present-day conifers penetrate. The remains of these ancient forests are usually to be found in peat bogs, and the stumps of the trees are exposed only in situations where the moss has been worn away, or where the bog has been cut for fuel. We have, however, met with stumps of the Scots fir in districts where peat was more or less absent, and where these stumps, along with certain lateral roots, projected above the surface in a remarkably good state of preservation. In one of these localities the stumps are found at a height of at least 2,300 feet —probably more—and the nearest living Scots fir is distant some six miles lower down the valley.

These early forests were very extensive, and, so far as can be judged from present-day evidence, extended to a height of some 2,500 feet above sea level. In at least one instance a stalker depends entirely for his firewood on the stumps and roots of these early forest trees, and, as a matter of fact, their burning qualities are infinitely superior to present-day firewood, for they are extremely resinous and easy to ignite. It seems to be the case that when a tree is dying it converts a considerable amount of its starch into resin—why is somewhat difficult of explanation—and the resin so formed acts as a protection against damp and decay.

Of the age of these ancient forests comparatively little is known, but they are of great interest from the fact of their presence at an altitude considerably greater than the present-day limit of the Scots fir. In early times the great

Caledonian forest extended over vast areas, from the extreme western limits of Scotland to the lands adjoining the east coast, and it is doubtless the remnants of this forest which are present among the Cairngorm mountains. Relics of the Caledonian forest are in evidence near Fort William, extending across to Rothiemurchus, and farther eastward, and are also found on the Moor of Rannoch and in certain districts of Argyllshire. As a general rule, it is the tree stumps and the roots alone which are present in these peat mosses. Sometimes, however, a prostrate trunk is to be seen, and in one instance we heard of a felled trunk lying beside the stump which bore unmistakable marks of some blunt instrument. Sir Thomas Dick Lauder, in his "Moray Floods," describes a cut through the Moss of Cluihaig, where, in 10 to 15 feet of peat, six or eight strata of roots of trees were obtained. We quote a passage from the above-mentioned work:—"The lowest stratum is of birch roots, about two feet above the gravel the moss rests on. Then come three successive strata of fir roots, 18 inches apart, another stratum of birch roots, and above that one or two more of fir that do not seem to have attained any great size. Lastly, there are firs now rooted and growing on the surface, but these are small and stunted, and are called, in the language of the country, 'darrachs.'"

Various suggestions have been put forth to account for the lowering of the timber-line in this country, though none is entirely satisfactory.

Above every mountain forest is a zone known as the "zone of protection," which consists of gnarled and stunted trees. Insignificant in themselves, these trees are invaluable to the forest in that they act as a protective screen, breaking the force of the strong gales which are prevalent during winter on the hills. It should be remarked that severe frost during fine calm weather does little harm to a tree, especially to so hardy a tree as *Pinus sylvestris*, but when that cold is accompanied by wind, the exposed tree must be hardy indeed to withstand it. It has been stated by a high authority that comparatively few trees are killed by the direct effects of frost, and that their death is due to desiccation. The injurious effects of a frosty wind are well known. A drying

wind, unaccompanied by frost, is more or less harmless, because of the fact that a tree is able to make good the evaporation of water from its leaf tissues. But during a frost the ground in which the roots are embedded is frozen fast, and the tree, unable to make good the losses due to evaporation, is in a very unenviable plight. Should the "zone of protection" be destroyed, the trees in the forest immediately beneath, being deprived of their shelter from the winds, will themselves take on the characters of the "zone of protection," and thus in time the forest line will retreat to lower elevations.

Undoubtedly large tracts of the original Caledonian forest were destroyed by fire, but how far this can account for the lowering of the timber line is somewhat doubtful. In early days the great Scottish forests were the haunts of wolves, and it was largely, we believe, due to this fact that the woods were set alight. But we rather incline to the theory that the true cause of the disappearance of tree growth from elevations where it was formerly abundant, is a gradual change in the climatic conditions of the country. Nowadays the extreme limits of growth of the Scots fir may be put at 2,000 feet above sea level—in Glen Quoich and Glen Derry for example. That the famous Larig Pass was in olden days wooded to near the watershed on the south side between the valleys of the Spey and Dee is a fact obvious to every hillman, though it may not be equally well known that the remains of these ancient trees extend up the Garbhchoire. It was in this corrie that we discovered, a few years ago, a small specimen of the Scots fir growing at a height of some 2,700 feet above the level of the sea. This, of course, was an isolated specimen, but was of considerable interest as showing that in certain sheltered glens conifers might possibly be planted to a height of over 2,000 feet above sea level. The tree above mentioned had reached a height of only a few feet, and it is not improbable that its growth had been limited to the depth of snow obtaining during the winter months. So long as the tree was small enough to be buried under the winter's snows, it would benefit in two ways. It would be completely protected from the injurious effects of the cold frosty winds, and it would also be safe from the attacks of hungry animals. The nearest forest of Scots firs is many miles from this

A SOLITARY REMNANT OF EARLY DAYS

straggler, and it would be interesting to know how the seed reached the locality. Probably it was blown along the frozen surface of the snow, for we ourselves have on two distinct occasions come across withered oak leaves at a height of close on 4,000 feet, and many miles from the nearest oak wood in the valley below, so that the leaves could only have reached the hill-top through the agency of a strong wind acting on expanses of frozen snow.

Not far from the corrie is a small specimen of the larch (*Larix Europæa*), growing at a height of well on to 3,000 feet and on a rocky hill-side. We have found a sapling of the rowan or mountain ash (*Sorbus Aucuparia*) growing above Loch Avon, more than 2,600 feet above sea level, but in this instance the seed had probably been brought to the wild locality by some passing bird.

In a certain corrie branching off Glen Derry we were interested to find a few rowans and birches in a little glen lying south-west, and so—one would imagine—considerably exposed to the sou'-westerly gales which are so prevalent in the district. The highest of these trees we made out to be growing just upon the 2,200 feet line, and it was in quite a vigorous condition.

It is of some interest that the firs composing the primitive Scottish forests are somewhat different from the normal *Pinus sylvestris*, and are said to be distinguished by the expert by reason of the redder colouring of the bark. To this type the name *Scotica* has been given, and it has been suggested that the firs found in England at the present day may have possibly quite a different origin from the type found in the Scottish mountains.

The destructive effects of violent gales are, of course, very great; for instance, the hurricane experienced in the Scottish Highlands in November, 1893, did immense damage to the exposed fir woods. The wind was from a northerly direction, and in certain glens and hill-sides in the extensive Forest of Mar scarce a single tree was left standing. The gale was accompanied by blinding snow, and was the most violent experienced in the district within living memory. On a certain hill-face in Glen Lui the effects of that storm are still evident, and rows of fallen giants, all pointing in the

same direction, give one the impression that the wood was systematically felled and then for some reason left *in situ*.

In connection with our theory that the climate is gradually becoming more arctic, we would advance a somewhat interesting case—a case which has occupied our attention during recent years, and which we venture to think may have some bearing on the subject. In one of the eastern corries of Braeriach there lies, at a height of approximately 3,600 feet above sea level, a snow bed which has not been known to disappear, within living memory at all events, even during the hottest summer. During the winter of 1908-9 the prevailing winds were from a somewhat unusual quarter, with the result that the corrie held less snow than usual at the beginning of summer. We visited the snowfield during early October, when it is at its minimum, and found from unmistakable signs that the drift had dwindled more than had been the case for a considerable number of years. We were thus interested to find that moss plants extended right up to where the snow had melted only a day or two before, and even penetrated under the snow cap itself. Where the moss had been uncovered for a number of days, we saw shoots of tenderest green being put forth, and every transitional stage was met with, from well-grown plants of a month old to specimens on the edge of the snow bed which as yet showed no signs of vitality, but which we had every reason to believe were still capable of growth. The presence of moss plants extending right into a snow bed which remains unmelted from year to year seems to us to be strong evidence in favour of the contention that our summers are less warm than in former times. One would certainly have imagined that this snowfield would have disappeared during the remarkable summer of 1911, especially as the preceding winter was, on the low grounds at all events, a remarkably mild one, but as a matter of fact the field at the end of that year was considerably greater in extent than after the cool summer of 1909.

Be the cause what it may, the undoubted lowering of the timber line in the Highlands is of especial interest at the present time, when so much attention is being paid to afforestation in Great Britain, and further investigation on the subject would be of considerable value.

CHAPTER XXVI

CAIRNTOUL IN SNOW

RISING straight from the Larig Pass, Cairntoul reaches a height of over 4,200 feet, and is, to be exact, only seven feet lower than the summit of Braeriach, across the Garbh-choire burn. Although March is well advanced when we make the ascent of the hill, all nature is shrouded in a thick mantle of white. Glen Lui, at all times a romantic glen, is looking extremely lovely with its dark pine trees standing out sharp against the white hill-sides, on which a few dark specks are beginning to appear—the result of strong sun the previous day. The storm has been so severe here that the deer fences have been in places completely buried in the snow, and the deer have thus gained access to the plantations, but had little time to do harm, as almost immediately the drifts around the fences were cut away. At Derry Lodge there is an average depth of two feet of snow, and from the Linn of Dee the road is quite impassable for any kind of vehicle. From the lodge the path leads for about a couple of miles along the Lui burn, and the scenery is exceptionally grand. In the snow are the tracks of many foxes, which hereabouts are numerous, and a grey crow flies lazily off in front of us.

The Lui crossed, the snow becomes much deeper and firmer, so that it is possible to walk on the surface; but all traces of the track are completely hidden. For some distance we skirt Cairn a' Mhaim, and have in front of us Ben Bhrotain and Monadh Mor, each of them close on 4,000 feet high. At this point there is scarcely a black speck visible in the vast expanse of frozen snow, and we wonder where the grouse, which here appear to be fairly numerous, can obtain food. The foxes, too, are hard pressed to find a livelihood, and on the snow are marks of many a stealthy stalk and the

leap which very often ends a grouse's career. As we round Cairn a' Mhaim, the Devil's Point comes abruptly into view, closely followed by Cairntoul and Braeriach, while to the east of the pass Ben Muich Dhui rears its massive bulk.

The weather is now the cause of some uneasiness, as the sky is becoming dark and threatening to the south, and a very fine snow has begun to fall. Evidently there is thunder in the atmosphere, as in a short time the upper air current has changed from north to south, then west and finally north-west. On the west side of the Dee, just under Cairntoul, is a watcher's bothy—known as the Corour bothy—which is now plastered with snow. The snow is found to have penetrated even to the inside of the bothy, and the severity of the storm may be judged when it is stated that the river is flowing completely under the snow for miles on end—in fact, it is extremely difficult to tell on which side of the water we are, as the snow bridge is of such thickness that no sound of water reaches us as we cross. From the bothy to the summit of Cairntoul the climb is exceedingly steep, and as the snow in places is soft the difficulties are greatly increased. At a height of about 3,000 feet a snow bunting is seen flying across the hill. It is progressing leisurely, and seems to be almost as white as the surrounding snow. Several ptarmigan are flushed—to fly off croaking down the hill, and it is noticed that they are mostly in pairs. Although the temperature is not much above freezing-point, there is hardly a breath of air, so the heat seems more intense than on many a summer's day, and we are only too glad to rest from time to time. As we go higher the rocks are found to be covered with beautiful crystals of frozen snow, projecting, in some instances, nearly six inches beyond the rock. During most of the ascent perfectly shaped snow crystals have been falling, while a thin mist every now and again rests upon the summit of Ben Muich Dhui; but suddenly the sun bursts through the clouds and gives promise of better weather conditions. The last hundred yards are the stiffest of the climb, and great care has to be exercised, a false step meaning a fall of, perhaps, 1,000 feet down the precipitous ice-covered slopes.

However, the summit cairn is at length safely reached, and is found to be thickly encrusted with snow and ice. Even

here a dead calm prevails, but the frost is more severe. Lochan Uaine, nestling in the northern corrie of the hill, is completely buried under the snow, so that one would never suspect that a loch was in the vicinity ; while the infant Dee, where it falls over Braeriach in an almost continuous waterfall, is also quite invisible. A cornice projects over the plateau of Braeriach and Cairntoul to a distance of many feet, and here and there an avalanche has fallen to the glen below, showing how treacherous these cornices are, especially when the frost gives. A thin mist now envelops the southern part of the plateau for a short time, but does not reach the cairn, and some fine cloud effects are seen. On account of the haze the view is rather restricted, but Cairngorm is conspicuous, and to its right Ben Bynack, while across the Larig, Ben Muich Dhui stands out prominently, its snow-covered cairn being clearly visible. Down the whole length of the Larig Pass the Dee runs under the snow, with the exception of one small opening only a few yards long, and every burn is invisible. To the west the weather has now cleared somewhat, and several hills are dimly made out, clad in spotless white. A golden eagle comes soaring across from the east, sails past on motionless wings, and is soon lost in the distance. Here, too, was the home of the raven and the kite, but these have, unfortunately, been banished from the district. The osprey doubtless crossed these mountain plateaux on his fishing expeditions from his home on Speyside, but he too has been lost to us as a nesting species.

As we descend to the Larig the ptarmigan are croaking around us, and are feeding on the wind-swept ridges, while in the distance herds of deer gaze at us or move slowly off. The sky has cleared, and the full moon is beginning to shed her light on hill and glen as we leave this region of desolate grandeur, while the grouse are calling loudly to each other as they settle down for the night.

CHAPTER XXVII

BIRDS AS MOTHERS

THE different varieties of our British birds vary to a great extent as regards their parental affection for their young. To take first the lordly golden eagle. The description one reads in books as to these birds attacking with great fury anyone venturing near their eyrie must be taken with a good deal of reserve. So far as my experience goes—and I have examined a good many eyries and young eagles—the parent birds never under any circumstances venture to approach the human intruder, and while the eaglet is being photographed, or even held in the hand, keep at a respectful distance, taking apparently but little interest in the fate of their offspring. Once while I was photographing a fully fledged young eagle, the youngster suddenly looked up and commenced to call loudly. The cause of its excitement was the appearance of its mother, who came sailing over the cliff, bearing in her talons a fine grouse. The eagle on seeing me immediately rose in spirals to an immense height, and finally was lost to view, while her offspring gazed in blank reproach at her fast vanishing form. One would imagine that there must surely have been some grounds for the eagle's reputation as a fighter, but whether it has become less ferocious than in olden times, or whether it had a somewhat too high reptutation for valour, the fact remains that very rarely indeed will the eagle show fight.

The peregrine, on the other hand, is a courageous bird when its nest or young ones are threatened, and will not hesitate to swoop at the intruder in the effort to protect its treasures. Too often, alas, its courage makes it fall a victim to the keeper's gun, but it rapidly becomes very wary, should it escape the first attempt on its life. Although a brave bird where the defence of its young is concerned, the peregrine is

often wantonly aggressive, and has been known to strike down and kill a couple of rooks which happened to cross its path, without deigning to observe where they fell. The young peregrines are very voracious, and keep their parents constantly busy in supplying their needs. Should the hen bird be shot while brooding, the cock does not seem to be by any means inconsolable over her death, but sets out immediately in quest of a new mate, and it is rarely indeed that he comes back alone.

The young of both the golden eagle and peregrine are sturdy little chicks, even when first hatched, and their thick white coat of down renders them impervious to any ordinary cold. I remember once remarking, while photographing a couple of youthful eaglets, on their extreme hardiness. Although a cold wind was blowing from the south-east full on the eyrie, and the eaglets were only about a week old, they did not seem to be in the least degree inconvenienced by the low temperature, but appeared perfectly comfortable and happy.

Both the kestrel and sparrow-hawk are attentive parents, and instances are on record of the latter bird returning with food for its young, although severely wounded at the time.

As regards the grouse and ptarmigan, the red grouse is at times a most attentive mother, but this is not always the case, and what has forcibly struck me when comparing these birds with the waders, such as the golden plover or curlew, is their great difference of behaviour when they have young. The grouse, when she is disturbed with her brood, may have recourse to all kinds of tricks in order to lure the intruder from her chicks but once she knows that her treasures have been discovered, she will retire to a distance and watch you quietly. The curlew and golden plover, on the contrary, keep up their wailing calls of distress until you have wandered far from the vicinity of their young, and even when you have put a distance of wellnigh half a mile between yourself and their chicks, the parent birds still hover around and seem very loath to leave you. When the young grouse are hatched, they wander some distance from the parent birds should the weather be warm, but at the approach of evening are brooded by

both cock and hen. Choosing a stretch of short heather, or a part of the moor which has recently been burnt, both old birds crouch side by side, dividing the brood between them, and will not move until you are almost upon them. Then they flutter off in a state of great excitement, while the young either remain crouching together or else scurry off and hide in an incredibly short time.

Although the grouse is a zealous parent, I think its near relative, the ptarmigan, is a still more affectionate one, as even before the eggs are hatched out both birds are in a state of extreme anxiety when their nest is in danger, and venture quite near the intruder, the cock bird croaking mournfully and nodding his head to his mate, as though reproaching her for leaving her nest. One day while on the hills I came upon a young ptarmigan crouching behind a stone, and after I had photographed him he rose and flew chirping down the hill-side. Immediately a brood of ptarmigan chicks rose from all sides as if by magic, and the mother bird came flying up in a state of great alarm and stood at my feet, mutely imploring me to do no harm to her young. I have never before or since seen a ptarmigan display such a degree of bravery, for she actually flew straight towards me, and then walked up to within a few inches of my feet and gazed at me appealingly.

On another occasion I was walking along a mountain plateau, over 4,000 feet above sea level, with a precipice of close on 1,000 feet a few yards to my left. Flushing a brood of young ptarmigan some distance to my right, I was astonished to see them, almost without exception, flutter past me over the edge of the precipice. The mother bird was running about in an excited manner, but probably her chicks were old enough to cling to a ledge on the cliff, or else to flutter safely to the foot. Although ptarmigan are such affectionate parents, they are timid to a degree, and often their chicks fall victims to a marauding stoat or hoodie. On one occasion I discovered a hen ptarmigan apparently in great trouble, and on searching the ground near her found a tiny ptarmigan chick, only a few days old, with its head completely severed from the body and its down lying all round. The chick had been killed only a very short time,

for the body was still warm, and although I looked long and carefully in the vicinity, I could find no trace of any others of the brood, so that perhaps they escaped.

Another attentive mother bird which is met with at the same haunt as the ptarmigan is the dotterel, which has often been called the "foolish dotterel" on account of its absurd tameness. When these birds have young they appear, as a rule, to be quite devoid of fear, and walk round the intruder uttering a plaintive call-note, "twee, twee, turr," every now and again jerking their heads suddenly backwards after the manner of the plover family. The dotterel usually returns to the same nesting site every spring, and I remember photographing, one July day, a dotterel with young which was exceptionally confiding. Next year I found the nest in almost the same part of the hill, and although when I discovered it the young were just hatching out, the parent birds were extremely wary, never approaching the nest while I was in the neighbourhood.

Of the waders, perhaps the most demonstrative when the safety of her chicks is concerned is the curlew. When brooding on her eggs she is, as a rule, most wary, often rising when you are close on half a mile away, but when the young have been hatched out, both parent birds conquer their natural shyness and hover around, the while uttering their wailing cries. Late one summer evening I noted a mother curlew with her chicks on a grass field up a lonely Highland glen. So long as I kept to the path she betrayed no uneasiness, but directly I walked towards her she rose excitedly, and her chicks immediately crouched low among the grass. While I was photographing them the curlew kept flying restlessly around, until finally she swooped at me, uttering a wild shriek, which was almost human in its anguish, and quite different from the usual call of the bird. On the lower ground the curlew hatches out her young towards the end of May, but on the high hills she is often a month later, and the chicks above mentioned were photographed as late as July 5, about 9.15 P.M.

The golden plover is another anxious mother, although she is not so conspicuous as the curlew, for she rarely takes wing, running along the ground and repeatedly

uttering her mournful whistle, "tuee, tuee." Even before the young are hatched, both cock and hen attempt to draw the intruder away from their nest by every artifice. The cock stands on a raised portion of the hill-side, and from his point of vantage gives warning of the approach of danger by uttering his alarm note. Then the hen quietly slips off the eggs, and, after running some little distance, begins to call loudly also, so that the nest is very difficult to locate. Sometimes, however, the cock is away feeding, and then the hen bird will sit till you are almost upon her, fluttering off at last as though wounded.

One day I almost trampled upon a sitting golden plover. The altitude was high—close on 3,000 feet—and a thick mist covered the hill. Suddenly I saw the brooding plover not three feet off, and the golden feathers on her back rendered her conspicuous as she sat motionless on her nest. As long as I remained looking at her she did not move, but directly I had walked a few paces away she silently slipped off and vanished in the mist. Evidently I had come upon her unawares, and, thinking I had not noticed her, she had sat still in the hope of avoiding detection; but directly my back was turned she saw her chance of escape. Next day there was no mist on the hill, and she left the nest while I was quite a hundred yards off.

The common tern is noted for its affection for its young, and once I had a curious instance of this. A pair of terns had hatched their chicks on a shingly stretch of a Highland burn, and strongly resented my presence, swooping repeatedly to within a few feet of my head and screaming loudly. About half an hour later, when I was lying on the banks of the burn nearly half a mile lower down, one of the terns came down-stream eagerly scanning the waters for fish for its young. On catching sight of me, and apparently recognising in me the intruder who had a short while previously trespassed near its chicks, it suddenly changed its course, and with a shrill cry of anger swooped once at me, and then proceeded on its way down stream.

One of our latest nesters is the bullfinch, and sometimes the birds are busy constructing a nest for their second brood as late as July. I had one of these late nests under obser-

YOUNG WILLOW WARBLER

YOUNG BULLFINCHES—COCK AND HEN

vation, and one morning in August found that a storm of wind and rain the previous night had caused the nest to fall to the ground. The young were then about a week old, and by the time I had discovered the catastrophe two had already succumbed to wet and cold, and the remainder could be heard calling plaintively in the vicinity. One poor little fellow was almost done for, but, after a warming at the kitchen fire, soon recovered. The nest was badly knocked about, and I therefore placed it on a table in the balcony, so that the young should be sheltered from the wet. When the mother bird returned with food she could not understand where her young had disappeared, and her perplexity was pathetic to see as she called repeatedly but could not locate the answering cries of the chicks. At length, however, she discovered their whereabouts, and reared them in their new home without mishap. The bullfinch, when she has young, is almost without fear, and on one occasion a hen bullfinch which I was photographing became so tame that she would actually rise from her nest and take hemp-seed from my lips, afterwards shelling the seeds daintily and feeding her young.

CHAPTER XXVIII

WINTER ON MOUNT KEEN

FEW hills in Aberdeenshire stand out so prominently as Mount Keen (Monadh Caoin = "beautiful hill"), 3,077 feet above sea level. Situate near the head of the Tana, it forms the march between the forests of Glen Tana and Glen Muich, while its southern slopes lead down to the Esk. The morning chosen for the ascent dawns somewhat threateningly, with a very red sunrise, but when we leave Aboyne the frost is still hard and the day gives promise of turning out well. For the first few miles the motor makes good progress, but in the upper reaches of the glen a good depth of snow covers the ground, and the going is very stiff. In the shelter of the wood there has been no drifting, but as we gain the open moorland the road for long stretches has been swept quite bare, and drifts of no mean dimensions are piled across it in various parts. However, by dint of backing the car and rushing each wreath, we penetrate about a mile beyond the stalker's cottage at Etnach; but here the drifts become insurmountable, so the car is left and we walk the remaining mile to where the path strikes up the hill.

The frost has evidently been exceptionally severe in these parts, for we cross the Tana on the ice—in fact, for quite long distances the burn is frost-bound—and strike up the hill. We flush numerous grouse and see rabbits in plenty, these latter being in a very weak state owing to the frost and snow. Soon we reach a point where the spindrift is being blown in clouds before the strong west wind. As we progress the drift becomes so blinding that it is difficult to see ahead, and the small dog which accompanies the party becomes very sorry for himself, having eventually to be carried by his owner. After reaching the 2,000 feet line, the drift, strange to say, ceases, owing to the fact that nearly all the snow has already

been blown away; but in one slight depression, just before the last steep climb is commenced, the spindrift is blinding.

The north-east corries of the hill hold an immense quantity of snow, and a well-defined cornice is visible. Where we are walking the snow has been blown into strange waves by the force of the gale, and resembles nothing so much as the surface of a troubled sea. At this height animal life is practically non-existent, but a glimpse of a snow-white ptarmigan is caught as the bird disappears over the corrie, flying with the gale. Apparently even at this height there has been a "fresh" recently, for we note a good deal of clear black ice appearing beneath the snowdrifts. The snow, as a rule, is strong enough to bear us, but occasionally one of the party falls through, with unpleasant results.

The clouds have gradually been descending, and now envelop the hill top, but we push on nevertheless. The wind increases to a full gale, and the frost is intense—one's moustache and hair being frozen hard. We enter the mist, and plod onwards, eagerly on the lookout for that most welcome sight—the summit cairn. After several false alarms, and not a little uneasiness, lest we have gone off the line in the mist, the cairn is seen looming through the cloud. Here the gale blows with such power that we are, as it were, blown across to the leeward side, and the small dog has a narrow escape from being hurled down the corrie. The stones of the cairn are heavily coated with ice and snow, and we are glad to regain breath in their shelter. Fearing a snowstorm, we soon make a move for less exposed quarters, and are urged forward by the wind down the hill. A few hundred feet below the cairn the mist suddenly opens with beautiful effect, and we see the Braid Cairn near us, to our east. A thick haze somewhat restricts the view, but Morven's bulk can dimly be made out across the valley of the Dee. A good many white hares are put up, and we see the tracks of a fox in the snow.

One of the party here has rather an unpleasant experience. Seeing a tempting wreath, he glissades gaily down it, but at its lower extremity the drift becomes as hard as iron, and, losing control of himself, he goes down at full speed, being brought up by the heather at the bottom. A number of stags are made out at the foot of a corrie, and one

poor animal runs off as best he can with a broken foreleg, but makes wonderful progress notwithstanding. On the steep hill-side over against us the peregrine has his summer home, but is not seen to-day, being doubtless in less stormy quarters.

As we reach the lower ground the snow becomes quite soft, and down in the valley a "fresh" has set in. Looking back, we see the cone of Mount Keen from time to time appearing from out the clouds, but soon a big, heavy bank of mist rolls up from the west and shrouds the upper reaches of the hill. On the return journey deer in great numbers are passed, and a hind and her calf, apparently being unused to motors, misjudge the speed of the car, and have a narrow escape. Once past the stalker's house at Etnach—said to be a corruption of the Gaelic word "Aitionach," "abounding in juniper"—we soon leave the forest behind us, and reach our destination ere darkness has set in.

CHAPTER XXIX

LOCH AVON AND BRAERIACH IN JANUARY

As we left lower Deeside one bright afternoon in the first week of the New Year a severe snowstorm was being experienced along the valley, and immense wreaths were visible everywhere, so we naturally imagined that the road from Ballater to Braemar would be wellnigh impassable. Mountaineers carrying "skis" were also bound for the Highlands, but on the arrival of the train at Ballater looked most depressed, as here the snow was practically non-existent, and the railway motor conveyed us up to Braemar without difficulty. The drive up Glen Derry was exceptionally beautiful, with a clear moon lighting up Derry Cairngorm and Ben Muich Dhui, while near the road numbers of deer were feeding. The atmosphere was extremely mild, and there was but little snow even on the highest hills, so that it might well have been a June evening as regards temperature and the amount of snow seen.

Next morning we were early astir, and set out for Loch Avon as the day was breaking. The morning was fine, and as we passed through the forest to the north of the Derry the coal titmice were waking and calling to each other on the tree-tops. It is wonderful how hardy these little birds are, for they keep to the high grounds even when the weather is at its worst. We saw and heard many grey crows, and at one spot the writer heard a peculiar rasping note which was quite strange to him, but the light was not sufficiently clear for him to identify the bird. Near the head of Glen Derry we watched for some time a peregrine falcon on the look out for grouse. He was unsuccessful, however, and disappeared over the hills to the eastward. Soon afterwards we flushed a covey of grouse, which must have been in hiding from the peregrine, for instead of flying down wind, as is usually the

case, they kept right in the teeth of the strong breeze, and disappeared in the opposite direction to that taken by the falcon. On entering Coire Etchachan a large herd of deer was observed on the sky-line to the north, near the summit of Larig an Laoigh Pass, seemingly making for the valley of the Avon. Coire Etchachan held very little snow, and we could see that most of the remaining wreaths were the result of a previous storm from the north-west, and there were few signs of the storm which had just swept over Deeside. As we ascended the corrie, Beinn a' Bhuird (3,900 feet) became visible to the east, with but little snow on its summit plateau, and above the hill the sky was of a beautiful light blue tinge. The atmosphere was exceptionally clear, and from the top of the corrie, Lochnagar, some twenty miles to the east, well justified Byron's "Dark Lochnagar," being of a deep, deep blue, with large fields of snow standing out in marked contrast on its slopes, and with its summit at times touched by fleeting clouds. Looking eastward, a curious phenomenon was visible. Often during a hot summer day one notices a shimmering above the heather, caused by the rapid evaporation of moisture. On this occasion these shimmering waves were much more conspicuous than usual, and formed a belt right across the corrie, at a height of several hundred feet from the ground. We noticed that they were more conspicuous to the south than to the north, but this phenomenon is one which we never remember having seen before at this season of the year.

As we reached Loch Etchachan we felt the full force of a strong wind sweeping down from Ben Muich Dhui, the summit of the hill being just touched by the clouds. The loch was frozen hard, and the ice at least six inches in thickness. The surface was extremely smooth, and the strength of the wind was sufficient to blow us along the ice without any effort on our part. For a short time we indulged in this novel form of sliding, and then crossed the plateau and made for Loch Avon. Ben Muich Dhui carried very little snow for the time of the year—in fact, on September 13, when we made the ascent, there was more snow than on the present occasion. On the date of this expedition (January 3) an extensive field of snow had formed on the site of the old wreath in the Snowy Corrie, but on Cairngorm there was scarcely a patch of snow

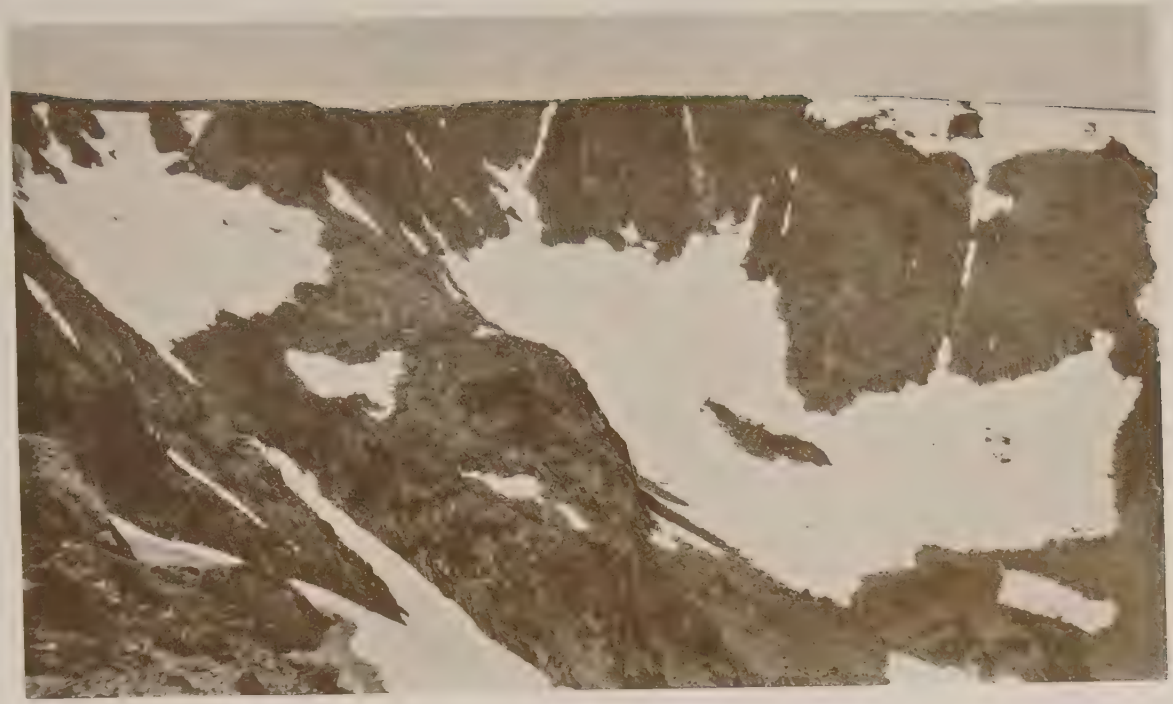
visible. On the plateau between Loch Etchachan and Loch Avon we saw several ptarmigan, and in their white plumage they were very conspicuous on the dark hill-side. On these occasions when little snow is on the hills the ptarmigan keep in close proximity to any wreaths remaining, so as to be able to crouch on the snow when an eagle approaches. Just as we had reached the edge of the plateau and looked down upon Loch Avon, many feet beneath us, we flushed quite a number of ptarmigan, and very charming they looked as they flew across the loch, their snow-white plumage contrasting sharply with the dark blue waters lying far beneath them. They had not flown far before an eagle, which had evidently been perched on the rocks above the loch, swooped down and pursued the flying ptarmigan in a leisurely manner, but, so far as we could see, did not capture one. We descended to the west end of the loch and lunched by the banks of the Feith Bhuidhe. The heather was exceptionally green, and there was less snow on the rocks than was the case last August. We ascended the Feith Bhuidhe, which was looking extremely wild, with masses of ice covering the rocks near the burn, and found the going by no means easy, as a very strong wind was sweeping down upon us from the head of the corrie, and much ice on the rocks made it difficult to keep our footing.

Loch Avon and the hills to the east were more distinct than they usually are from this point. The west end of the loch was quite clear of ice, but the eastern extremity was ice-bound, though it appeared as if the ice was being broken up by the mild west wind. From the head of the Feith Bhuidhe we had a clear view of the Moray Firth, but the mist was gathering on Cairngorm, and was descending from Ben Muich Dhui to near the 3,500 feet line. Striking south, we made for the ridge immediately above Loch Etchachan, having a remarkably fine view of the loch and the mist-shrouded precipices, and after rather a difficult descent regained the shores of the loch. Here we admired a truly beautiful sunset. Northward the clouds were salmon-coloured, with an occasional grey mist bank passing between us and the clouds on which the sun was shining. The mist on Ben Muich Dhui had taken on a pinkish tinge, while eastwards

the moon was shining faintly in a sky of deep azure blue, with Beinn a' Bhuird and Lochnagar looming darkly on the horizon. The ice on Loch Etchachan was covered with water, showing how mild the temperature was even at this height, and the gale at the east end of the loch was so severe that it was difficult to stand against it. By this time the best of the sunset was over, but from here to the Derry we had the light of the moon to guide us, and it proved amply sufficient to show the track.

Next morning we set out, hoping to reach the summit plateau of Braeriach. The morning was unpromising, with mist and drizzling rain, but by the time the bridge spanning the Lui was reached the rain had ceased, though the mist still hung on Ben Bhrotain and Monadh Mor. The Devil's Point looked very imposing with a mist cap on its summit, but Cairntoul and Braeriach were both enveloped in cloud and almost invisible. We flushed more grouse than usual, and near the junction of the Dee and Garbhchoire had a pretty sight of a merlin working the hill-side. So intent was the little hawk in examining the ground for prey that he did not see a golden eagle bearing straight down upon him until the king of birds was quite close. The merlin apparently received an unpleasant surprise, for he dashed off at top speed; but the eagle soared on unheedingly, and began quartering Cairntoul. He was soon joined by a second eagle, when they both sailed round the hill, being ultimately lost in the clouds. We saw one of them again in pursuit of a covey of ptarmigan, but on seeing us he turned aside from his chase. The mist now lifted somewhat, and the top of the ridge of Braeriach, which bounds the west side of the Larig Pass, was visible. A deep wreath forms every winter near the summit of the ridge, but as yet the field was comparatively small. As we climbed the steep ridge from the Dee to the summit plateau of Braeriach we noted the ptarmigan in great flocks flying aimlessly up and down the pass, and occasionally caught sight of the eagle which was causing such fear amongst the birds. We do not ever remember seeing so many ptarmigan here before, but doubtless the hunting eagles accounted for their presence.

The mountain grouse flew excitedly round the side of Brae-



THE SNOWY CORRIE OF BRAERIACH IN JUNE

riach, suddenly alighted then on the rocks on the hill slope, but almost immediately they were on the move again, and flew restlessly across the face of the hill. Their alarm was doubtless to a great extent due to the absence of snow, on which they are accustomed to hide from the eagles during the winter months. We thought we distinguished a flock of snow buntings in the distance, and noted a herd of deer crossing a snowfield near the summit plateau, making for the highest ground. At a height of about 3,500 feet the mist came down on us and did not again lift. However, by following the precipice we gained the summit cairn after an exciting walk along the ridge with the gale threatening to blow us off our feet. Down in the pass the weather was summer-like, and even here there was hardly any snow except a few wreaths along the precipice; but we sank deep into the gravel, rendered exceedingly soft and spongy by mild weather following on severe frost. The cairn gained, we made a brief stay, and noticed the tracks of the deer even at this height. For stags to be at an elevation of over 4,000 feet during the first days of January is an occurrence which is almost unique, as deer make for the hill tops only during the hottest summer weather, and usually at this time of year are in the vicinity of the stalkers' houses. The return journey was uneventful, the only wild life seen being a few ptarmigan and grouse; but during our long journey through the Larig the moon shone brightly on the pass, and even the distant hills, now free of mist, stood out almost as clearly as in daylight.

CHAPTER XXX

THE COMING OF SPRING ON THE CAIRNGORMS

LONG after spring has arrived in the low-lying districts the wild hills of the Cairngorm range are still in the grip of winter, for April has usually passed before the snows begin to dwindle and the dark rocks of corrie and precipice reappear once more. It is at this season, when spring commences to make its presence felt on the snows of the hills, that the mountain lands have a special charm, and a day spent amid their lonely solitudes must well repay the lover of the beautiful. As you leave your base this April morning, the wind is carrying heavy sleet showers from the mountains in the west; but as the sun gains in strength the clouds lift and break, and as you push on through the famous Larig Ghru—the mountain pass connecting the Spey with the Dee—the weather is clear and promising. Crossing the Lui Burn, which has its source in Ben Muich Dhui, you look up the glen, and note that the hill is as yet shrouded in mist, but even on its lower slopes carries a great amount of snow. To the east Lochnagar is clearly seen, and as you round the shoulder of Cairn a' Mhaim and enter the Larig proper, one by one the Cairngorms come into view. Glen Geusachan, with Monadh Mor, covered deep under many feet of snow, at its head, is to your west, while farther north the Devil's Point, with its precipitous rock slopes, where the golden eagle has its eyrie, stands out dark and forbidding. Behind it Cairntoul, perhaps the most imposing of the Cairngorm Mountains, is dazzling white in the strong sun, with its summit just touched by light, fleecy clouds, which are slowly but surely rising. Facing you, but still some miles to the north, Braeriach is seen, and on the eastern side of the pass Ben Muich Dhui, the second highest hill in Britain. The pine forest is now left behind, the

last trees being passed at an altitude of just under 2,000 feet. You note a kestrel, which seems loath to leave the neighbourhood, and probably he is thinking of nesting in one of the ancient grey crows' nests which are to be met with on nearly every tree. The eagle, too, nests on the outskirts of a forest rather than actually in it, and prefers a tree on a sloping hill-side, so that he may have an extensive view from the eyrie. In this district, it is pleasing to state, the eagles are allowed to rear their young in security, as grouse are seldom seen in any numbers and are very rarely shot.

A mile or so before the country march between Inverness and Aberdeen is reached, the river Dee divides into two branches. One of these, known as the Garbhchoire, strikes west, and has its source on the summit plateau of Braeriach, where it issues from the ground at a height of some 4,000 feet above sea level. This source is known as the Wells of Dee, whereas the springs on the summit of the Ghruamach Pass are known as the Pools of Dee. Although the burn coming from the Pools is larger than that from the Wells, it has the shorter course, so that the burn having its birth on Braeriach is generally known as the true source of the river. A mile or so below its source the infant Dee plunges over the precipices of Braeriach, and drops close on 1,000 feet in long waterfalls. At this time of year the river is completely hidden beneath the snow, even where it falls over the cliffs, and does not issue from the snow bridge till it has joined the larger body of water in the main glen. Near the summit of the pass you have a view of great wildness looking up the Garbh-choire, with Cairntoul and the Angel's Peak—so called, it is said, to keep the Devil's Point in its place—on the left of the valley and the massive bulk of Braeriach to the right. You cross the Dee a short distance below the Pools by means of an extensive snow bridge, many feet in depth, beneath which you can faintly hear the rush of the water.

Having crossed the infant river, you strike up the steep face of Braeriach. The snow line is now passed, and, as each step has to be cut, going is necessarily slow. You are struck by the scarcity of ptarmigan, only three or four being seen during the ascent to the summit cairn, but doubtless the golden eagle has been over the ground in advance. As you

ascend the hill the clouds are seen to be lowering all round, and soon a blinding shower of snow sweeps down from the west. Before it clears you have gained the summit plateau, and as the sun bursts forth the view is majestic in the extreme. A cornice of snow many feet thick projects over the edge of the precipice, and the whole plateau is a stretch of spotless white, with the summit cairn deeply encrusted with snow and ice.

Taking a somewhat different route for the descent, you arrive at an almost perpendicular slope with a large snow cornice projecting over it. On an average day the snow here would be too hard to permit of glissading in safety; but to-day the strong sun has softened the surface and allows you to "brake" with your feet as you descend. Still, it requires a good deal of courage to start yourself over the edge, especially as another of the party has preceded you with hardly successful results; but once launched away the "going" is not so fast as you expected, and the bottom of the slope is reached without mishap, after a delightfully exhilarating experience. In the distance are seen a party of mountaineers crossing the Larig Ghruamach from Braemar to Aviemore, and from the slow progress they are making it is conjectured that they are finding the walk through the snow somewhat trying. A magnificent view is obtained of the whole length of the pass to the south, with Beinn a' Ghlo (the Mist Mountain) in the background.

Just before regaining the pass you discern a small speck in the vast expanse of snow, and closer inspection shows it to be a dead ptarmigan in perfect condition. Evidently this particular bird has fallen a victim to the golden eagle, which you have before now seen chasing ptarmigan, seemingly for the mere pleasure of the thing. The dead ptarmigan is the last interesting object seen during the long tramp through the pass, until at length the welcome light of the stalker's lodge is seen in the clear mountain air, and your destination is reached after an outing on the hills of more than thirteen hours' duration.

CHAPTER XXXI

A NIGHT WITH THE GOLDEN EAGLE

It was to study the eagle with her young that a friend and the writer set off one early summer night for an eyrie not many miles distant from "Dark Lochnagar." Leaving the low grounds shortly after ten in the gathering dusk, we were accompanied for the first mile by a stalker, who put us on the track—very difficult to locate in the darkness—and wished us good luck ere he returned to his cottage. The night was wonderfully clear, for though there was no moon the sky in the north never lost its glow, and even at midnight the hills could be made out without difficulty—the large snowfields looming out with almost startling distinctness.

Our way for the first three miles led up a rocky glen with a small burn hurrying down to the river below, and on the banks of the stream numerous birches made the night air fragrant with their sweet perfume. From time to time we scanned the westward heavens for Halley's comet, but that celestial visitor did not put in an appearance, and a view of him a few nights previous to the expedition was, we must confess, a very great disappointment. Not a sound save the subdued murmur of the water disturbed the intense stillness of the night as we made our way up the glen, but an occasional ghostly form was from time to time made out hurrying past in the gloom when we disturbed some stag or hind browsing on the rich grass near the burn-side.

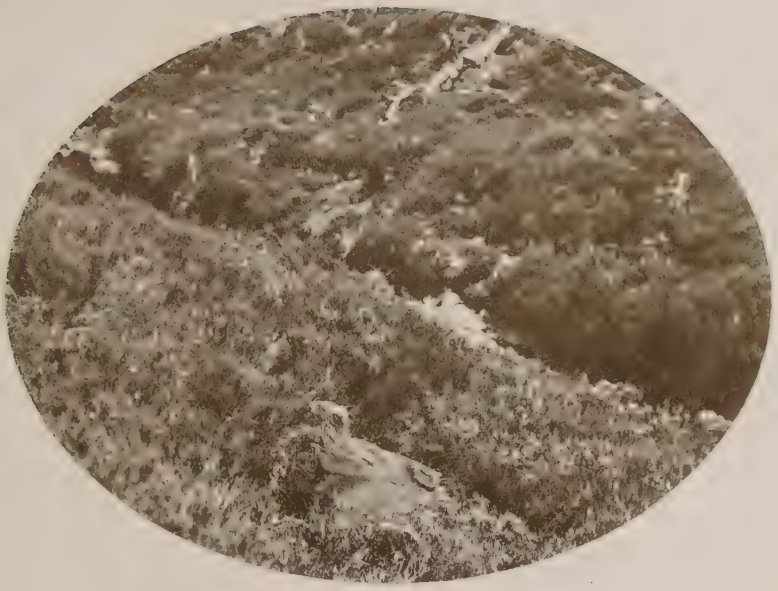
It was now nearing one o'clock, and the light in the northern sky had increased considerably, so that one could read the time on a watch with ease. As we crossed the bog at the watershed the whistle of a golden plover as the bird flew past us in great alarm, sounded extraordinarily loud, and, as a matter of fact, this was the only note of any bird we heard during the whole of our climb. Descending to the "glen of the

eagles," the giant pines were dimly visible in the dusk, and one white and filmy object was the theme of much speculation, so ghostly and unreal did it appear in the dim and uncertain light. The vicinity of the eyrie was reached about 1.20 A.M., and having chosen a tree with a good view of the nest, we made ourselves as comfortable as circumstances would allow and waited for daylight.

I was awakened from a somewhat uneasy sleep at 1.55 by the song of missel-thrushes in the vicinity. Several of these birds were singing loudly in various parts of the glen, and a few mergansers were flitting noiselessly up and down the stream. The eyrie was now faintly visible, and an indistinct white shape seemed to suggest the possibility of an eaglet, but the light was not yet bright enough to make out any object with certainty. Shortly before three o'clock chaffinches burst into song, and we now perceived to our intense satisfaction the golden eagle standing on the edge of the nest and guarding a solitary chick.

It is a noteworthy and curious fact that some 80 per cent. of nesting eagles lose one of their young during the first three weeks of its existence. Numerous explanations have been advanced to account for this, but they are all somewhat unsatisfactory, although we imagine that the supply of food is at times insufficient for both youngsters. The eagle was standing over her young with wings slightly raised, and the chick seemed quite contented with his head alone sheltered by his mother. Before the light had become clear confused movements were noted in the eyrie, and the youngster was in all probability having his morning meal. Occasionally the chick would raise his head and appear to beg his mother for an extra tit-bit, but this was refused him with gentle firmness.

Hour after hour the eagle stood motionless over her young with a look of tender mother-love in her eyes, quite unlike the usual fierce expression associated with the king of birds. The sky, shortly after two, had become quite free of clouds and the air was extremely cold, the touch of frost which had set in on the passing of the clouds being by no means conducive to our comfort. Almost exactly at four o'clock the sun rose in the north-east. He came over the brow of a hill



GOLDEN EAGLE IN DISTRESS

EAGLE PANTING IN INTENSE HEAT

looking red and angry, and for the space of fifteen minutes lit up the glen with a deep red light. The brooding eagle looked particularly beautiful in this light, being transformed for the while to a ruby red bird of prey, and the young bird also being faintly tinged with pink. The sun reddened the snowfields on crater-shaped Cairntoul with charming effect, but his reign was all too short, for ominous clouds, hurrying up from the west, soon hid him from our sight. The weather had now completely changed, and soon the Cairngorms were shut in by the gathering mist.

I had intended to secure a photograph of the eagle leaving her eyrie, but the feeble light effectually put a stop to all efforts in the photographic line, and shortly before six the eagle slipped noiselessly off the nest and disappeared from sight, having in all probability set out on a foraging expedition.

In the eyrie were the remains of what appeared to be a wood-pigeon, and the breast-bone of a grouse was lying at the foot of the tree. Once we saw the eaglet—which seemed about a month old and was still covered with fluffy white down—walk unsteadily to the edge of the eyrie and peer over inquiringly. On one of these excursions he nearly lost his balance, and thereupon wisely retreated to the centre of the eyrie and lay down comfortably. When, after a wait of quite six hours, no signs of the parent eagle were forthcoming, and the weather had changed for the worse, we reluctantly gave up the attempt at photography and commenced our return journey. For a couple of miles our way led along the banks of a large mountain burn, which was running full on account of the melting of the snows, and at one point a hind on the farther bank gave indications that she had a calf in the vicinity. During the descent a grey wagtail was found and photographed on her nest near the 2,000-foot level, and several ring-ousels were disturbed from the head of a gorge. A dipper flew rapidly past, bearing food for her young ones, and as we reached the banks of the Dee the whistle of the oyster-catcher fell pleasantly on the ear.

THE YEAR ON THE HILLS

SPRING

The Season of Heather Burning.—On the advent of March the Highland keepers begin to plan out the strips of heather to be burnt, and if the weather conditions are genial many fires are set a-going before the end of the month. I once obtained an excellent photograph of a hill-side alight on an upper Dee-side forest, with the snow-clad Cairngorm mountains visible in the background. The photograph was obtained early in April, when the conditions were perfect in every way. A slight breeze was blowing from the south-west, and the sun shone with as much power as in mid-June, so that a few minutes after the match had been applied a large stretch of the hill was burning vigorously with a curious crackling sound. In a deer forest the heather is not burnt in patches, but a whole hill-side may be set on fire and left to burn itself out. Although, no doubt, of benefit to the deer, in that it allows the young grass to shoot, this wholesale burning has rather a depressing effect on the hill affected, and it is not until several years have elapsed that the ground recovers its former appearance. Naturally, a fire of such a great size is quite out of the control of the stalker, and thus he must be careful to choose a day with the wind blowing in such a direction that it will prevent the conflagration extending to any forests in the vicinity. Familiarity breeds contempt, however, and to the uninitiated the stalkers often appear over-confident, for they return home to leave the hill ablaze, often with an extensive pine forest within half a mile of the spot! But, as a general rule, a great deal of snow still remains on the higher grounds during the months of March and April, and this acts as an effective check to the fire.

An Eagle's Strange Nesting-site.—In the Highlands of Scotland the golden eagle not infrequently nests in

an ancient Scotch fir in preference to a rock, but until recently I had never known of one condescending to construct its eyrie in a birch. It was while passing through a narrow glen linking two valleys that I came across the eyrie. It was situated on the outskirts of a straggling birch wood at a height of some 1,600 feet above sea level, and was quite near the path. The tree on which the eyrie was situated was growing on a steep hill-side, and as the nest was only some ten feet above the ground, it was possible to look right into it from above. As I approached the nesting site I saw one of the eaglets rise from near the eyrie and fly somewhat clumsily across the narrow glen, alighting on the farther side and peering anxiously about. After a few minutes it seemed to consider that it had not put a sufficient distance between itself and its enemies, for it once more rose and soared off down the glen in excellent style. After a time it alighted about a quarter of a mile from me among some long heather. On reaching the eyrie I found it empty, but evidently the birds had been there very recently, for remains of various kinds of prey were scattered about, and I noticed a rabbit's skull in a good state of preservation. Rabbits simply swarm in the neighbourhood, so the eagle can have had no difficulty in providing her chicks with plenty of food. In the eyrie was lying a branch of heather, pulled quite recently and with the blossom still on it. This was interesting, for in an eyrie which I had visited that morning, and which had not been tenanted for some time, I found a similar branch of heather. From the remains of old sticks lying beneath the tree it would appear that the eyrie was several years old. While I was examining the nest, either the same or another eaglet flew over my head as if watching my movements, but I saw no signs of the parent birds.

A Ptarmigan's Curious Nesting-place.—I once came across a ptarmigan's nest in a curious situation. The nest was situated right under an overhanging rock, and was quite invisible from above. I have only once before known of a ptarmigan nesting under a rock, and on that occasion the locality was infested by hoodie crows and common gulls, which gave the unfortunate ptarmigan a very

"THE LOCH OF THE JUNIPERS"

THE PTARMIGAN CALLED UP BY AN IMITATION CRY
OF CHICK IN DISTRESS

rough time of it by harrying their nests continually. It might only have been a coincidence, but it seemed as though, on that particular occasion, a ptarmigan wiser than the rest had hit upon the idea of concealing her nest under a rock; and the plan worked well, for she was one of the few birds which hatched off their young. On the present occasion there was also good reason for concealment, for a golden eagle had her eyrie not a couple of hundred yards away, yet the ptarmigan hatched off her brood successfully.

Dangers of the Ptarmigan.—A short time ago, when on the hills, I noticed a pair of hoodies rise guiltily a little way from me, and on reaching the spot found a ptarmigan, quite warm, but with her head cut clean off. She was evidently a brooding bird, and the explanation of her death seemed to be that, while flying low over the brow of the hill, she had struck against one of the wires of a sheep fence, and the force of the impact had severed her head as cleanly as though it had been done with a knife. Ptarmigan are extremely close sitters, and recently I found a hen ptarmigan sitting very hard, but with two of her eggs lying outside the nest. Evidently she had been much scared and had flown off in a great hurry, scattering her eggs as she took wing, and a golden eagle's feather lying near afforded a probable explanation of her hasty departure.

The Cuckoo's Young Offspring.—On a certain occasion I came upon a meadow-pipit's nest containing four lawful eggs and one cuckoo's egg. I half thought of taking the one laid by the cuckoo, but in the end left it to be hatched out. A fortnight or so later, when the young cuckoo was only a day or two old, I found that even then he had thrown out the rightful occupants of the nest, which were lying stark and stiff within an inch or two of their dwelling, while the ugly, black little villain was in sole possession, and even at that early period of his life strongly resented my taking him up to look at him—opening his bill wide with rage. As the cuckoo is so very young when it evicts the other occupants of the nest, it is probably due to instinct and not to premeditated wickedness that it treats its fellow-nestlings so callously; but perhaps the strangest thing of all is the indifference of the parent birds to the fate of their

offspring, for they will not make the slightest attempt to replace their young in the nest once they have been thrown out, but will devote their whole attention to the alien, while their own chicks slowly perish outside. This at first sight seems to be a terrible state of affairs, but if the foster parents had their own brood to feed as well as the cuckoo the food they provided would not be sufficient for all, as it takes them all their time to feed the cuckoo alone when he is nearly ready for leaving the nest. But why, it may be asked, do not the cuckoos still rear their broods themselves, as their foreign relatives do, and as they themselves undoubtedly did at one time? To this question I fear there can be no satisfactory answer. Sometimes, however, the cuckoo lays her egg in the wrong nest, for instances are on record of an egg being deposited in a carrion crow's nest, and, when the young birds were hatched out, of the cuckoo being killed, either intentionally or nòt, and being thrown out of the nest.

The Cuckoo's Favourite Victims.—The meadow-pipit is victimised more than any bird by the cuckoo, and probably the reason for this is that the latter is often plentiful on the moors, where, except for the moor linnet, there are few birds for the marauder to victimise. It has been proved that the cuckoo does not invariably lay her egg actually in the nest of her victim, as in one instance a meadow-pipit's nest was found under a rock in such a position that a cuckoo could not possibly have entered the hollow, but must have deposited the egg outside, and then placed it in the nest by means of her bill. Probably this is more often the case than is generally supposed, as cuckoos have been shot while carrying eggs. An extraordinary thing, when the size of the bird is taken into consideration, is the smallness of the cuckoo's egg. When laid in a meadow-pipit's nest it can scarcely be distinguished from the eggs of the rightful owner, so alike are they in size and markings. The meadow-pipit is an interesting bird. It's call-note is an oft-repeated "zizick, zizick," or "sphink, sphink," while the male has a song very like his near relative, the tree-pipit. Flying to a good height, he descends precipitately to the ground, uttering his song the while, but the notes he uses on his ascent are different from those uttered during the downward

flight. The first brood are able to look after themselves by the month of June, when the majority of the parent birds start housekeeping afresh, and I have seen newly hatched young as late as the middle of July. The linnets are very anxious when any danger threatens their young, and fly restlessly around the intruder with their bills full of food, calling incessantly. It is rather interesting to notice that their having food in their mouths in no way interferes with their call-notes. The birds feed their young principally on insects, "daddy-long-legs" being a very favourite morsel. Even as late as August an occasional meadow-pipit will be seen collecting food for her brood, but by this month the majority of the birds have finished their nesting cares. Until late October, or even November, however, they linger at the nesting haunts, as if they would, were there a sufficient supply of food, prefer to remain always on the uplands.

Jack-snipe Nesting in Scotland.—The jack-snipe has long been supposed to nest in Scotland, but definite information has so far been lacking. I was talking a short time ago to a keeper who has an extensive knowledge of ornithology and is a most reliable observer, and he stated positively that he discovered the nest of the jack-snipe on his beat in 1910. The nesting site was undoubtedly very suitable for the bird; in 1909 a male jack-snipe was seen on the ground, but a nest was not found, though there probably was one in the vicinity. This particular district may well be said to be a birds' paradise, as another rare bird, the greenshank, was noted recently during the nesting season. Among other birds nesting near each other may be mentioned the common tern, lesser tern, eider-duck, black-headed gull, ringed plover, redshank, lapwing, shelduck, shoveller, tufted duck, grouse, stock-dove, not to mention such small birds as the wheatear, linnet, meadow-pipit and rock-pipit.

Blackbird and Squirrel.—A short while ago I was witness of a fierce attack on a squirrel by an enraged cock blackbird. The squirrel was leaping from tree to tree, while the blackbird flew shrieking after it, and every now and again swooped down viciously on its enemy. A close search in the vicinity revealed a blackbird's nest containing well-grown young birds, upon which

the parent blackbird evidently thought the squirrel had designs. It is a well-authenticated fact that squirrels have no scruples about sucking eggs, but I have not heard of them killing young birds, though from the cock blackbird's behaviour it was evident that he looked upon the squirrel as a very suspicious person. Unlike most birds, the blackbird often rears a couple of families in the same nest. Towards the end of April, 1911, I found a nest with eggs situated in a thick laurel bush. I did not have occasion again to visit the neighbourhood till June 23, and was surprised to find the nest once more occupied and containing a full clutch of eggs. This is not an isolated instance, for I have noted similar cases before. Another bird which sometimes uses the same nest twice is the robin; but, as a general rule, a bird does not return to the first nest to rear a second brood.

A Tame Lark.—On one of the best-known Scottish golf courses a lark nested in a rather dangerous situation. The nest was built and the young reared at a distance of scarcely fifty yards from a teeing ground, and directly on the course where many a foozled drive passed perilously close to it. Almost every golfer on leaving the tee caused the bird to fly off her nest, yet the plucky lark ultimately hatched her brood, despite such adverse conditions, and became so confiding that she would sit quite unconcerned and allow one to approach within a few feet of the nest. As late as August 3, 1909, there were larks sitting on eggs or small young on the course, and a few days later all of them were noticed to be in a state of great excitement. The cause of this was found to be a weasel, which was prowling about the nesting ground surrounded by many perturbed larks. Every now and then a bird would drop down in front of him, but would flutter away just before the weasel could seize it—evidently attempting to decoy the marauder away from the nesting site.

Dangers of Young Terns.—During windy weather the colonies of terns suffer severely. In the first place, the parent birds have great difficulty in preserving their eggs, as if they leave the nest for a few minutes only the eggs are in danger of being completely covered by the drifting sand. It must be a most trying ordeal for the birds

to sit on their nests while the sand is being swirled along in blinding clouds in front of the gale, and it is scarcely to be wondered at if they desert under the circumstances. For the unlucky young birds which are caught in the drift the danger is a most serious one, and I have found many youngsters lying dead after a day of exceptional wind. Crouching in the sand, the young terns apparently have not the sense to seek the shelter of the bent; at all events, they are blinded by the sand, which completely fills their eyes, and the cause of death is probably suffocation, as in time their nostrils are bound to become choked. I saw one nest of newly-hatched lesser terns in a pitiable plight, being half covered in the sand, so I made all haste to leave the spot to give the opportunity to the mother bird to return. Near the largest colony of terns a colony of black-headed gulls have established themselves, and do a considerable amount of harm among the former birds. One often sees a black-headed gull flying off with a tern's egg in its bill and hotly pursued by the infuriated sea swallows. There is no doubt that the gulls also kill the young terns, as many are found with wounds which have apparently been caused by the sharp beak of a gull.

Robbing an Eagle's Eyrie.—A short time ago I had a most interesting conversation with an old Highland stalker, who gave me some of his experiences of the king of birds. Many years ago a pair of golden eagles had their eyrie on his beat, and one season he was requested by the owner of the estate to capture the young eagles and bring them back with him as best he could. The eyrie was on a rocky hill-side and built on a ledge; but after some difficulty it was reached, and the eagles captured—by no means an easy undertaking—and placed in a large basket which the stalker had taken with him for that purpose. Just as he was preparing to leave, however, the parent bird appeared on the scene and proceeded to attack him in the most determined manner. Out of self-defence he or his companion fired at the infuriated eagle, and after several shots she fell among the heather at the foot of the rock. The exact position was carefully marked and, a detour having been made round the rock, the bird was found lying, to all appearance, lifeless on the ground. The stalker was

preparing to lift her, with a view to placing her in his game-bag, when suddenly the bird came to life again and fixed her talons in the unfortunate keeper's arm, holding it in an iron grip. It was some minutes before the bird could be persuaded to let go her hold, when it was found that the talons had pierced right through to the bone, inflicting a very severe wound. Although this was dressed with all possible skill, the healing process was an extremely slow one, and to this day the stalker bears the marks of his encounter with the eagle.

The Haunts of the Snow Bunting.—A friend and I had gone to the hills with the intention of studying the snow bunting amid his wild haunts, and were fortunate in discovering at least two birds in a favourite corrie. They were both accomplished songsters and very confiding, so that we were able to watch them at a distance of only a few yards. One bird frequented a certain locality for a considerable time, and just as we had begun to imagine that he must have a sitting mate not far off, the songster, after going through the most wonderful manœuvres, flew right away and disappeared completely. He first flew up to a height of a few yards, and sailed gracefully down with wings held well above his head, the while uttering his song. Then, as though a sudden impulse moved him, he shot skywards, and for the space of a few minutes flew wildly to and fro at a considerable height, giving utterance to the most excited cries. At last he headed north and was not seen or heard again. A second individual also puzzled us by his behaviour, and we quite failed to locate the vicinity of the nest. Ptarmigan were very numerous, but a considerable number of birds seemed to have had their eggs sucked, possibly by stoats, for we saw no signs of any grey crows during our stay on the hills. We saw two sitting ptarmigan, and both birds allowed of an approach to within a foot or two without showing any inclination to leave their eggs.

The Crossbill in Scotland.—The haunt of the crossbill is usually to be found in the pine forests of the Highlands, where it often nests with the golden eagle as a neighbour. It is, perhaps, the first of our birds to commence nesting operations, and eggs are often found as early as February. On one occa-

sion a nest was found towards the end of that month with young birds already hatched, but owing to a heavy fall of snow these had succumbed. On the other hand, as late as the end of July I have seen a crossbill and her brood haunting the topmost branches of a spruce tree and breaking off the tender shoots, many of which were falling to the ground. This fact would point to at least two broods being reared in the spring. Young and old keep in parties during the early part of the summer and hunt for food together. The nest is generally placed among the topmost branches of a fir or spruce, and is formed of twigs, dry grass, moss and lichen, with a lining of the same materials. Four eggs are usually laid, but occasionally five are met with; their ground colour is greyish white, and they are spotted sparingly with reddish brown. They somewhat resemble those of the greenfinch, but are of larger size. Although nesting but sparingly in Great Britain, the crossbill breeds throughout the European pine forests and also in parts of Africa, but in Great Britain it is met with chiefly as a winter visitor.

Song of the Willow Warbler.—This small, sweet songster is to be found almost everywhere in the Highlands in the late spring and throughout the summer. The vanguard of the willow wrens arrives, should the spring be favourable, during the first week in April, but in some seasons I have not heard their song until the first day of May. Some years ago we experienced quite a heavy fall of snow about May 7, after a fine mild April, and the willow warbler's note seemed strangely out of place as he flitted about amongst the snow-covered birches. The birds often arrive over an extensive area in the course of a certain day, and their song is heard in widely separate districts about the same time. When they first reach us their song is very soft and low, but after two or three days' rest they regain their voices, and on all sides their sweet, undulating notes are borne on the wind. For a month or so after arriving they seem to take little thought of domestic duties, and it is not until well on in May that the earliest nesting birds begin to construct their nurseries. Both cock and hen help in the work, and very charming it is to watch them flitting to and fro, bringing nesting materials for their home. By the first days of June the eggs are usually

laid and incubation has commenced. The nest is cleverly constructed, being domed, with a side entrance, and lined with feathers, which form a warm and soft bed for the eggs to rest upon. The outside of the nest is composed principally of dried grass, with an occasional sprig of withered heather. The nest is so well hidden that even after the exact spot has been marked it is difficult to locate, and often the eggs are trampled on by unwary gardeners and keepers. The alarm cry of the willow wren has a singular sadness and appeal, and is repeated continuously so long as danger threatens. The willow wrens rear but one brood during a season, and after the beginning of July gradually become silent for about a month, during their moult. Early in August, however, their song is recommenced, and I remember one summer when they continued in full music throughout the month; though usually the song after the nesting season is over is uttered only occasionally. The song is commenced in a high key, and gradually descends lower and lower, though often just before its close the notes rise again somewhat. Towards the end of September the cold winds of autumn warn these delicate little summer visitors that they must be moving south, and by the end of the month they have all departed for sunnier climes, till the voice of spring once more calls them to the north.

Curious Nesting of the Tawny Owl.—The usual nesting site for this somewhat common owl is in a hollow tree at a considerable elevation; but a little while ago I obtained a photograph of a nest on the ground, in a disused rabbit burrow. On meeting a Highland stalker one day, he came up in a state of great excitement and told me he had discovered a most curious nest which he was anxious for me to identify. He had been gathering sticks in the wood close to his house, and on stooping to pick one up saw the eyes of the owl glaring at him from the hollow. What happened is best told in his own words: "I said, 'Come oot, ye rascle,' and, by George, he came oot quick enough, nearly hitting me in the face." "He" had seemingly been somewhat upset by the stalker's brusque remark, for "he" did not return to "his" nest again—in fact, during "his" hurried exit 'he" had unfortunately broken one of the eggs, and one

YOUNG TAWNY OWLS

finds it almost always the case that when a bird has unintentionally broken one of its eggs in the nest it deserts and makes a fresh attempt to rear a brood. "As wise as an owl" would seem to be a most inappropriate saying, if one judges by the behaviour of a certain tawny owl I know of. For eight years at least she—I imagine it must be the same individual—has attempted to rear her brood in a particularly snug hollow in a very ancient lime tree. Unfortunately for her the nesting site is well known, and I doubt whether she has once succeeded in bringing up a family during all these years. Usually the eggs have been stolen; but once or twice she has hatched out her young, only to have them taken from her before they have been able to fly. It seems quite pathetic to find the confiding bird there season after season; but the chief reason for her tempting providence in such a manner is probably the dearth of suitable nesting sites in the locality, where the trees are principally firs.

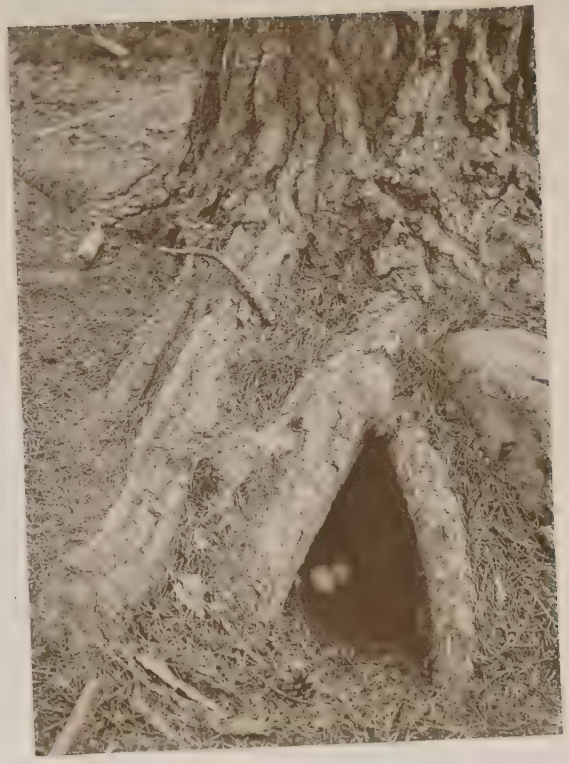
Habits of the Ptarmigan.—The ptarmigan is in many ways a bird of exceptional interest, and not the least noteworthy point about this hardy dweller of the mountains is its rigorous adherence to an invisible line below which it very rarely passes. This line varies to a certain, though small, extent, according to the elevation of the hill-top; for instance, the ptarmigan on a hill whose summit is only 3,000 feet above sea level are met with from the 2,500 foot line and onwards, but on the higher mountains of 4,000 feet or more in height the birds are seldom found below the 3,000 foot level. This disinclination of the birds to descend to the lower levels is all the more curious because, in many instances, the feeding there is precisely similar to that on the high hills. As a general rule, the ptarmigan avoid ground which is wholly given over to heather, and prefer hill-slopes where the blaeberry grows abundantly. I remember once visiting a mountain where this plant grew luxuriantly on the upper slopes. Then came a large area given over to grass and heather, and, just under 2,000 feet above sea level, a small stretch of ground covered with blaeberry plants. I was very much surprised to see a pair of ptarmigan take wing from this latter stretch, though it was considerably below their normal level. It is probable that the birds were thinking of nesting, for the season was

mid-May; but the fact of their being at this low level showed, I think, their partiality for the blaeberry. It has been proved by scientific observers that the heart and arteries of the ptarmigan are especially adapted for the atmospheric pressure under which they live, and it would be of some interest to discover whether the rise and fall of the barometer has any effect on their movements.

The Nesting of the Woodcock.—Every season the number of nesting woodcock seems to be on the increase, and as a result of their early nesting the birds have often to face very adverse climatic conditions. The woodcock, too, has many enemies, and one season I knew of two nests being destroyed by either hedgehogs or weasels, the eggs being sucked and scattered abroad. When she has first begun to brood the woodcock is comparatively shy, and readily deserts her nest; but when the young are on the point of hatching she sits very closely, and will even allow herself to be stroked on the nest. As eggs are found as early as March and as late as August, the woodcock, it would seem, raises more than a single brood in the season, and this, too, is sometimes the case with the snipe. The sparrow-hawk is very partial to woodcock flesh and often destroys a number of birds, especially during the nesting season.

Eagles and their Claims to Unoccupied Eyries.—The fact that eagles frequently repair an eyrie which they do not intend to use during that particular season is of some interest. I have on several previous occasions remarked on this interesting procedure, which, according to Colonel Willoughby Verner's interesting book on "Bird Life in Spain," is the custom in that country also. There can, I imagine, be no doubt as to the reason for this habit of the golden eagle. Evidently he is asserting his claim to property in temporary disuse, and this decorating of an eyrie which is not destined to receive eggs has a definite purpose. The presence of fresh green twigs in the nest shows unmistakably to any stray eagles who happen to be nest-hunting that the eyrie is already in the possession of its rightful owner, and thus prevents them from setting up house in the glen already tenanted—for a pair of golden eagles must have a

TAWNY OWL



NEST AND EGGS OF TAWNY OWL

wide hunting ground, and I have never yet come across two pairs of birds in a Highland strath.

A Goldcrest in Strange Quarters.—At a deserted bothy in the heart of the hills I was surprised to see a small bird fluttering about the room. After a time it came to rest on the window, and I identified him as a golden-crested wren. Evidently the little stranger was migrating south, for the locality in which he was found was totally unfitted for his requirements, the elevation being close on 2,000 feet, and the nearest tree of any description many miles distant. How he came to take up his abode in such strange quarters is a mystery, for the district, so far as I am aware, is out of the path of migrating birds, and an isolated bothy, one would imagine, would present little or no attraction to a bird migrant. It is a well-known fact that the goldcrest migrates in enormous flocks, and every spring and autumn great numbers are killed by dashing against lighthouses, while even the lights of a city secure a certain number of small victims.

The Golden Eagle and its Young.—It is a somewhat remarkable fact that extremely few golden eagles succeed in rearing both their young ones. Two eggs are almost invariably laid, but after the young have reached the age of some three weeks one of them nearly always disappears. It may be merely a coincidence, but the eagles nesting in deer forests, where grouse and hares are not by any means plentiful, seem to rear two young birds less frequently than those nesting on or near grouse moors, where food is naturally more easy to obtain. No trace is ever found of the missing eaglet, and various somewhat fanciful suggestions have been put forth to account for its disappearance. It has been stated that one eaglet is killed by the other, or that the mother eagle puts an end to it herself on account of the scarcity of food. Without paying much attention to these attempted explanations, the disappearance of one of the eaglets is a matter well worth the attention of ornithologists.

The Hoodie on the Moors.—Although nesting freely along the coast-line, where suitable rocks are to be had, the hoodie, or grey crow, is more common in the deer forests of the Highlands, where he lives immune, for the most part,

from the attacks of keepers, who persecute him mercilessly where grouse or partridge are a consideration. Even in the deer forests, however, stalkers have latterly been keeping down their numbers, owing to complaints made by the proprietors of neighbouring grouse moors; and I have known of several hoodies being exterminated as they were brooding or returning to their nests. Grey crows are difficult to shoot during the nesting-time, as the birds choose a tree with a good outlook, usually well up a hill-side. The nests are found up to the limit of tree growth, about 2,000 feet above sea level, and one spring I discovered several in a little birch wood far up a mountain glen and with a great deal of snow still lying about. The parent hoodies were exceedingly wary, and although at least one bird was sitting at the time of my visit, I saw no signs of her presence. A keeper got to know of this nesting site, however, and in the end managed to shoot the hen as she was returning to her nest one evening. The grey crow is about a fortnight later in nesting than the rook, doubtless because of the more exposed situation of the nest.

The Hoodie as an Egg-stealer.—The hoodie is an inveterate egg-stealer, and when a grouse or ptarmigan has by some chance deserted its nest the crow sucks all the eggs in a very short time. It seems to be the case that when the rightful owner has forsaken her nest the hoodie will enjoy his meal at leisure; but when the mother bird has only left the nest for the time being, in order to feed or drink, the marauder extracts an egg and flies away with it, ultimately sucking it at the edge of some lochan or burn. A certain pair of eagles deserted their former eyrie—which was comparatively famous—and constructed a new one in a different part of the forest. Now, this eyrie, so far as I was aware, was quite unknown, as I gave myself the credit for its discovery; but on visiting the nest towards the end of the period of incubation I was surprised to find that one of the eggs had vanished. Of course, it might quite possibly have disappeared by human agency; but the locality is infested with hoodies, and I have repeatedly seen them mobbing the eagles, so it is quite likely that one of these grey crows visited the eyrie during the absence of the mother

NEST OF RED KITE

It is quite 40 years since the nest was occupied

eagle and carried off one of the eggs. This supposition is strengthened by the fact that only recently a stalker discovered in a hoodie's old nest a curious egg-shell, which I examined shortly afterwards. The shell certainly bore a great resemblance to an eagle's, though possibly it might have belonged to a turkey; but as the nearest turkey must have been many miles away, and several pairs of eagles nested in the vicinity, the egg had probably been stolen from one of the eyries.

Buzzards and Ravens.—It always seems very curious why the buzzard and the raven should be completely absent as nesting species from the Cairngorm Mountains. One would imagine that here, if anywhere, they would be found rearing their young, for the corries are probably the wildest in Scotland, and ideal nesting sites abound. Notwithstanding this, I have never seen a raven on the Cairngorms in the nesting season, and I am able to assert with confidence that not a single pair nest, or have nested within recent years, on the range, though not so very far west they are by no means uncommon as a nesting species. The buzzard is also absent. I only once saw a specimen on the Cairngorms, and that was after the nesting season—in late July. He was carrying a bird in his claws, and was being chased by a few hoodies, but seemed quite indifferent to his pursuers. Can it be possible that the golden eagle will not allow the buzzard to nest near him? It is an interesting problem, whatever the true cause.

The Nesting of the Eagle and the Weather.—Although March of 1908 was stormier by far than any of the winter months, the eagles, wherever their nests were free of snow, laid about the middle of the month, notwithstanding the arctic conditions then prevailing. Even well on in April their nesting haunts were under snow, and yet by that time the eaglets were on the point of hatching. In one case the hen bird had died on the nest the previous year, and the lower part of her bill was found to be broken right off, though whether this was the cause of death is uncertain. The next season the cock bird secured a new mate, but left the old eyrie and crossed to the farther side of the glen. The new eyrie was built on a "witch's broom" near the top of the fir,

and the actual nest was merely a few green fir shoots, the whole foundation being the growth on the tree. The severe storms of March may have led the hen to choose this unusual position for her nest, as the construction of an eyrie would have been by no means easy when snow was falling almost daily, and a very little labour would have sufficed to construct a nesting place for her eggs on the ready-made platform. So unlike an eagle's eyrie was the structure, which I found after a long search, that I was most surprised to see the bird flap clumsily off and settle on an old dead tree a few hundred yards away. There were two eggs in the nest—one beautifully marked with reddish brown, and the other, which was unfertile, almost devoid of any markings. Although the date was as late as April 27, the winter's snow was still lying almost unbroken around the tree, and as the fertile egg was near the point of hatching, the parent bird must have sat through frost and snow for close on five weeks, the period of incubation being some forty days. Another eagle's nest I looked at on April 17 also contained eggs, and the hen was sitting so closely that she refused to leave the nest, although a friend stood and shouted at a distance of only a few yards. I have often noticed that the eagles repair more than one eyrie, and sometimes use the one which is not intended for the eggs as a larder. A pair of eagles of my acquaintance repaired one of their eyries very thoroughly—even lining it with dead grass—and yet no eggs were laid; but blue hares, etc., were deposited in it.

The Song of the Snow Bunting.—The snow bunting is perhaps our most handsome song bird, but as he is met with in only one or two of the most inaccessible of our highland corries, few ornithologists have ever had the pleasure of listening to his notes. Lately I spent a night at the haunt of this interesting species, and although unsuccessful in discovering a nest, owing to a mist rolling up from the low grounds before 7 A.M., I was able to obtain some interesting information as to the bird and its habits. A long and weary walk of more than twelve hours brought me to the nesting haunt a few minutes before midnight, and, making myself as comfortable as possible, I awaited the song of the bunting. At exactly 1.5 A.M. the

first bird was heard. He was perched on a large boulder and sang almost continuously for six hours. The time of the commencement of his song was interesting in that it was at least half an hour earlier than I have ever heard a bird in song in this country. After sunrise I stalked the songster and succeeded in getting to within a few yards of him, near enough to admire the striking contrast of his plumage, his white head and throat and dark bill being very conspicuous. Often he would rise in the air and utter his song as he soared round with wings held V-shape, much after the manner of a golden eagle when sailing near the ground. Unfortunately, a dense mist commenced to roll up the glen, and though a change of wind several times checked it, yet it ultimately surged up like a giant billow, and rendered further observation extremely difficult. I had hoped that by keeping the male bird under observation I might be able to discover the whereabouts of the sitting hen, but the advent of the mist made it impossible to follow the movements of the songster. It was evident that the young were not yet hatched out, as if this had been the case the cock bird would have been assisting the hen in feeding them; but as it was he seemed to be extracting the enjoyment of life to the full. To hear a snow bunting in full song is a rare pleasure; but in the season of 1910 I was fortunate in having an individual under observation during the nesting time. He was a most fascinating bird to study, and I used to lie for hours watching him and listening to his charmingly wild song. He was quite absurdly tame. On one occasion he came and perched on a stone not a dozen yards from me, when I obtained an interesting snapshot of him in full song. He had his own beat, consisting of three or four prominent boulders and—his favourite spot—a little moss-covered knoll, where he spent a great part of his time. As he sang on an average three or four times every minute, and continued singing till after eight o'clock, the number of songs which he sang during the day must have been truly enormous. On one occasion I was at his nesting haunt on a day of extraordinary heat. Not a breath of wind was stirring, even on the hill-tops, and the sun was shining from an absolutely cloudless sky. On arriving at the snow

bunting's beat I was very surprised not to see any traces of my bird, nor could I hear him anywhere in the vicinity. Later on, however, on crossing to another shoulder of the hill, where a field of snow was still lingering, I found him running about on the surface of the drift and enjoying himself immensely. Every now and again he would run across the snow with his head half buried in it, shoving it to each side after the fashion of a snow-plough! Then he would fly a little distance off and utter his song once or twice, but would soon return to the snow and renew his game. It was not till late afternoon that he sought his usual haunt. Apparently the eggs or young were destroyed by some severe weather about the end of June. At all events, I saw the hen early in July, and she did not seem to have either eggs or young in the vicinity, for she flew right off when disturbed, and did not return to the spot. In 1909 three or four pairs of snow buntings reared their young in this particular corrie, but the following season I only observed one pair, so that the others had possibly migrated north consequent on the fine weather of May and June. In 1912 not a single bird frequented the glen.

Range of the Lapwing Compared with the Golden Plover.—During recent years I have been noting with great interest the behaviour of the lapwing and golden plover on a certain hill eminently suited as a nesting site to both species. Half a dozen years ago the lapwing nested up to about the 2,000 foot line, and above this the golden plover held undisputed sway; but latterly a change has been going on. Fewer golden plover are now nesting on the hill, and the lapwing are increasing their range, as they are nesting in numbers on the upper slopes of the hill, to the seeming annoyance of the golden plover, which are now less numerous here than formerly. Unfortunately, the lapwing do not seem to recognise that at this altitude early nesting is a very precarious business, and as a result the birds have most of their eggs destroyed by the snowfalls of April, so it is not till June is advanced that they have broods to look after. The particular hill mentioned is in all probability unique as regards its bird life, and within a few hundred yards of each other may be found nesting in complete harmony ptarmigan, red grouse, golden plover, lapwing, and curlew, not to speak

of such small birds as meadow-pipits and wheatears. The summit of the mountain is just short of 3,000 feet above sea level, and once I was witness of the very unusual and interesting sight of a couple of green plover wheeling and sparring above the summit cairn, the male bird uttering his loud song the while. It would be interesting to know what has caused the lapwing thus to extend their breeding range. A likely explanation is that since the protection afforded their eggs they have increased to such an extent that most suitable nesting sites on the low grounds have been appropriated, and the birds are forced to extend their breeding range to the higher parts of the district.

Their Characters Compared.—The dissimilarity between the lapwing and golden plover has often struck me very forcibly, and especially when the two varieties are nesting together. The lapwing is an extraordinarily pugnacious bird, and during the nesting season pursues with great vigour and dash any intruder near his nesting site. The golden eagle presents no terrors to him, nor does the sparrow-hawk, and he will not hesitate to pursue them with great hatred. The golden plover, on the other hand, is quiet and unobtrusive, and I have never yet seen it take the offensive against any bird or beast. Another curious difference between them is that the lapwing is nearly always on the wing when intruders are near his nesting site, whereas the golden plover utters his alarm note almost invariably on the ground, and does not take wing unless absolutely compelled to do so. On the whole, it might be said that the golden plover is the more lovable bird, while the lapwing possesses the more energy and resource.

Lapwing and Cormorant.—I was once the witness of a somewhat novel affray between a green plover and a heavy-looking cormorant. The cormorant was winging his way up the estuary of a river, and was flying at a great speed, helped by a following wind, when a lapwing, feeding on the river-side, suddenly swooped out and attacked the stranger with great fury. The unwieldy bird was quite taken aback, and, after attempting for some little time to avoid the determined onslaught of the green plover, half fell to the water, and sought to escape from his enemy by

swimming low. The lapwing was evidently satisfied at the sign of surrender on the part of the cormorant, for it flew off highly gratified with the result of its impromptu sally.

The Eagle on Grouse Moors.—As with the peregrine so with the golden eagle where grouse moors are concerned—though it must be confessed there are some striking exceptions in the case of the king of birds. There are an unfortunate pair of eagles that I know of which have been unlucky enough to choose, as a nesting site, a deep gorge in the very heart of a well-stocked grouse moor. The eyrie is comparatively easy of access, for it is built against a mountain ash—the one tree in the gorge—and with a little care one can walk right into the nest. The eyrie has been used for many years, though I very much doubt whether the birds have ever succeeded in bringing off their young; but, with a perseverance worthy of a better result, they return year after year to the place, only to have their eggs taken almost immediately they are laid. A short time ago I paid a visit to the eyrie, in the hope that the eggs had escaped attention; but on my way up the hill-side I put up the female eagle as she was moping in a hollow, and she flew slowly across the hill, passing near her eyrie in her flight but evincing no interest in it. The grouse were very excited as she crossed over them, but beyond stooping somewhat viciously at one, she completely ignored them and was soon lost to view over the ridge. I surmised from the presence of the eagle so far from the eyrie that the eggs had been taken, and this was found to be the case when the nest was reached.

The Crested Titmouse.—Until recently it had never been my good fortune to see this species at its nesting site. For some inexplicable reason the crested titmouse, although nesting regularly among the fir woods of Upper Speyside, has never—during recent years at all events—been met with in the extensive forests of the upper reaches of the Dee, and this although the two valleys are within twenty miles of each other. There is no difficulty in identifying the crested tit: first, by his prominent crest, and, secondly, by his very distinctive call-note, which is quite unlike that of his relatives, but is rather difficult to put into words. The individuals I had under observation were engaged in feeding among some old firs—in all proba-

bility on the small green aphis which infests these trees. They seem to be somewhat more wary than their relatives the coal titmice, for they were decidedly restless, flying from one tree to another and remaining in one spot for a very short time. The coal titmice, which were in the same locality, were absurdly tame, and allowed one to approach within a yard or two; they were hunting for food indiscriminately among fir trees and juniper bushes, whereas the crested tits fed on the pines only.

How Ptarmigan Face a Storm.—During the second week of April in 1908 very stormy weather was experienced on the Cairngorms, and on an exceptionally wild day I was very interested to watch the behaviour of the ptarmigan in the storm. Above the 2,000 foot line a regular blizzard prevailed, with a whole gale from the north, which blew the dry, powdery snow in front of it in suffocating clouds. So severe was the storm that at times one was compelled to halt and fight for a footing on the snow-covered hill-side, and it was impossible to see more than a few yards. Sometimes, however, a momentary calm descended on the corrie up which I was walking, and then the ptarmigan could be seen running about on the snowfields. When a fierce gust of wind came roaring down the corrie the birds crouched low, but did not seem to be at all alarmed by the gale, even running against it, crouching as low as possible to the ground. They were not willing to take flight, however, as the wind would probably have proved too much for them when on the wing. Although the hills were still deep in snow, the ptarmigan had already lost a good many of their winter feathers, which were lying about on the surface of the snow. One may say that all through the year the ptarmigan are moulting to a certain extent. Their spring plumage is assumed in May; in summer they lose still more of their white feathers, and then in early autumn the spotlessly white dress of winter is gradually assumed.

I also observed, during the above-mentioned expedition, oyster-catchers at the exceptionally high level of 2,000 feet. Although the weather was wintry in the extreme, and the birds when flushed made off down the glen, I saw them half an hour later heading their way up stream against wind and

snow, so apparently they were intending to nest at this considerable height. I also noted several wheatears on April 20, which were looking very disconsolate in the snow.

The Wing-power of the Ptarmigan.—Every hillman must have noticed with what extraordinary ease a covey of ptarmigan follow the slopes of a hill, seemingly rising with almost the same speed as their rapid sweep down the hill-side. There is no doubt that the wings of the ptarmigan have great strength, and I have seen it stated that the birds have, for their size, the largest and most powerful wings among our British game birds. Young ptarmigan, too, are able to fly while still absurdly small, and I have seen a covey of these mountain grouse scarcely larger than larks fly cheerfully over a precipice some 1,000 feet deep, though the parent bird, it is true, was in a state of great anxiety as to the result of her children's foolhardy effort. I think it cannot be doubted that the flight of the ptarmigan is more powerful than that of their near relatives the red grouse. I have seen ptarmigan relentlessly pursued by a golden eagle, and the birds were dashing up and down the hill-side at a very great speed. Some authorities state that the ptarmigan, while absurdly confiding in warm and sunny weather, are very wary and difficult to approach under wet or stormy weather conditions. Personally, however, I have not found this to be the case, for the birds have occasionally been so tame when a storm was raging that they would not move, although a friend hurled stones at them from a distance of only a few yards.

Variation of Colour in Ptarmigan.—Despite its singularly effective harmonisation with its surroundings, the range of colour which may be met with in two birds of the ptarmigan species was impressed on me strongly a little time ago. I was camping out in the heart of the ptarmigan country, and soon found a nest within two hundred yards of my tent. The bird sat extremely closely, so I had an excellent opportunity of comparing her plumage with that of a second bird which I came across later in the day. In the first instance the hen bird did not harmonise so closely with her surroundings as is generally the case, for her plumage—lichen grey in colour—showed up clearly against the dark green of the

surrounding vegetation. The second bird I discovered had her nest in the vicinity of heather, and her plumage—red brown in tone—was more in harmonisation with the vegetation than that of her relative on the opposite hill-face.

The Ptarmigan as a Parent.—I have often contrasted the behaviour of the ptarmigan, busy with family cares, with that of the red grouse under similar circumstances, and am bound to confess that the former bird is easily the superior of the two as regards parental affection. On the day mentioned above, a friend and the writer had amused themselves by rolling down large rocks over an extensive snow-field situated on an almost perpendicular slope. Our proceedings caused considerable anxiety to a cock ptarmigan, who flew down the hill-side and alighted on some rocks just below the snow, croaking anxiously, and time and again flying over a certain part of the hill. On our approaching the spot his anxiety still further increased; but when, after a careful search, we discovered the sitting mate, he was quite silent—with the exception of a single resigned croak—and watched patiently to see what harm would befall the hen. The latter, however, was confiding to a degree, and we exposed several plates on her at a distance of a few feet without causing her any apparent inconvenience. Even when the camera, caught by a sudden and violent gust of wind, was dashed to the ground with a resounding crash, the ptarmigan was quite undisturbed and remained quietly on her nest. In the case of the second bird, we were crossing a hill-side when we suddenly came across our sitter. In this instance the bird had a very narrow escape, for the writer noticed her just as his foot was being brought down on the identical spot where she was sitting. Even then the ptarmigan made no attempt to rise, but crouched low, with closed eyes, although she could not well have been ignorant of her danger. Despite the fact that there was quite a lot of cover in the vicinity, the mountain grouse had selected as her nesting site a piece of ground devoid of shelter of any description, and relied for her safety entirely on her wonderful harmonisation with her surroundings. It is probably the case that the ptarmigan is the closest sitter of any of our British birds; certainly she is without fear during the nesting season, at all events.

Fighting of the Blackcock. — In the blackcock probably more than in any other British bird, is the fighting instinct implanted. In winter and in summer do these warlike birds assemble, just as day is breaking, and engage in combat until the rising sun is shedding his rays over the hillside. A certain fixed fighting ground is always selected, and the blackcock are very conservative in returning to the same spot morning after morning throughout the year. The ground chosen is usually a grassy clearance in a pine forest, where the birds are more or less safe from the surprise attack of a fox, and it is a most interesting sight to see the combatants fly silently up from the forest depths in the uncertain light of the dawn. It was my privilege recently to be an interested spectator of this early-morning tourney. As I walked through the forest in the dim light of dawn the air was heavy with the scent of pines, and not a breath of wind stirred the tree-tops. My way for some distance led by the banks of the River Dee, and the course of the river was clearly defined by a thin grey mist rising in soft, vaporous columns into the still, frosty air. It was a few minutes past four o'clock when I arrived at my destination, and I was delighted to see in the twilight certain shadowy forms making determined rushes against each other.

An Early Morning Scene.—By exercising a considerable amount of caution I was able to approach the combatants, and took up my position behind an ancient pine, from which I had an excellent and uninterrupted view of the proceedings. As the light grew stronger I was able to bring my glasses into use and to admire the extraordinary way in which the birds spread out their tails, lowering their long, black tail feathers, and exposing to view their white plumage extended out fan-wise. In the early part of the proceedings these white feathers were the only parts of the birds clearly visible, and conveyed a somewhat unreal idea as to the appearance of their owners. For close on two hours fighting was engaged in, though it appeared to me that the combatants were never in deadly earnest, and fought more *pour passer le temps* than anything else. When a challenge had been thrown down and accepted, the two birds advanced slowly, crouching low on the ground and moving stealthily,

all the while eyeing each other keenly. Then suddenly, without warning, both birds rushed together and flew up a few feet into the air, sparring, apparently, with their claws. Individual fights were of short duration, however, for the birds soon separated by mutual consent, and almost immediately set out to search for fresh adversaries. On the ground were two or three grey hens, which seemed to move about from place to place, and naturally the fighting became more energetic on their approach. At times, when unusually excited, the blackcock half opened their wings and struck them sharply against their sides. After a time one of the grey hens left her admirers and flew up to the topmost branch of a tall fir, where she was an interested spectator of subsequent proceedings. Towards sunrise the fighting became more spasmodic, and the appearance of the sun himself was apparently the signal for peace to prevail once more. Fighting over, the birds spread out over the clearing, feeding quietly—on what, I was unable to make out—and I was interested to note that many of the blackcock held their tails spread out in a fighting attitude for some time after they had commenced feeding.

A Dipper Pursues a Trespasser.—A few yards from my hiding-place a pair of dippers had their nest, and while the cock bird was having his morning bath in the shallows an unsuspecting sandpiper flew up and made as if to settle on a stone near. The water-ousel, however, strongly resented this intrusion of a stranger on his beat, and hotly pursued the summer snipe up the river. I could not but think that the sandpiper had been treated somewhat curtly, considering that the migrant had only just reached his summer quarters after his long overseas journey from the south. In a pool in the river only a few yards from me a small company of mergansers were swimming sleepily about, and an oyster-catcher arrived to probe for food in the soft sand near the water's edge. On all sides the loud song of the missel-thrush was heard, and the sun, still low on the horizon, was lighting up the snow-fields on the distant hills as I left the blackcock to feed undisturbed after their morning's labours.

The Eagle and the Human Voice.—Though the eagle is the shyest of birds as a general rule, I have been

witness of one or two curious incidents lately which seem to point to the fact that the king of birds is quite indifferent to the human voice even at the shortest range. A pair of eagles have their nest every year on some rocks on a steep hill-side, but the same eyrie is not always used, the birds having three or four nests within a few yards of each other. In 1910 the lowest eyrie was tenanted, but in 1911 the eagles repaired a nest higher up on the rock. I first visited the lower eyrie, and from it could see that the nest above had been repaired; but owing to the elevation it was quite impossible to see whether the eagle was brooding. A vigorous and sustained shouting and clapping of hands was without the least effect, so I climbed to the hill-top and descended right on to the eyrie. When a few yards above it I had my first sight of the eagle. She was sitting, curiously enough, with her head down wind, and one of her wings was hanging right out over the edge of the eyrie. From the colour of the plumage, which was somewhat the worse for wear, the bird must have been of a considerable age, and from her position on the nest it almost looked as though she had died while brooding. This belief was strengthened by the fact that even at this extremely short range my shouting had not the least effect, and it was not until a large stone bounded over the rock perilously near her that she threw herself over the cliff and soared to an immense height in the teeth of the gale. It might be said that in this instance the bird was deaf; but in another case the eagle behaved in a precisely similar fashion. The eyrie was placed in an ancient pine tree, and if the eagle saw the intruder she would leave her nest while he was yet some distance away; but, provided the foot of the tree was reached without her suspicions being aroused, all the shouting in the world failed to dislodge her from her eyrie.

Merlin and Eagle.—I had the good fortune recently to see a pair of merlins engaged in driving off a golden eagle from their nesting site. My arrival at the birch-clad hill-side, which these little hawks had chosen as their home, caused them no small anxiety, so the appearance of a golden eagle soaring above them was more than they could stand! Both birds immediately set out in pursuit of the intruder,

stooping repeatedly at him and making his progress seem laboured and ungainly in comparison with their skimming flight. It must, of course, be borne in mind that the eagle was flying at a comparatively low level, which, with him, is a great disadvantage; but he was certainly no match for his small assailants. He, however, did the only thing suitable under the circumstances—treated his antagonists with supreme contempt and soared placidly on his way, until the merlins at length became weary of their attack on so unresponsive a foe, and sailed back to their hill-side.

The Ring-Ousel.—The ring-ousel or mountain blackbird is perhaps the most powerful songster of the mountains, and his song, though to a certain extent resembling that of his near relative the blackbird, has a far greater wildness in its long-drawn, plaintive notes, as the bird pours forth its song from the higher branches of some hardy larch or mountain ash far up the lonely hill-side. Sometimes the ring-ousels return to the uplands before winter is really over, and on one occasion were everywhere to be seen on the mountains on April 3—a day of summer warmth and sunshine, although two days afterwards the ground was covered by a good half-foot of snow. The mountain blackbirds are, as a rule, the first of our summer visitors to begin nesting operations, the nest being commenced during the latter part of April, while full clutches of eggs are generally found by the first week in May. A favourite nesting site is on a hill-side where juniper bushes grow in abundance, for the birds love to nest under the shelter of these dense shrubs, and the eggs are often so artfully concealed that it is impossible to see them until the bushes have been parted. The birds seem to prefer to be near a stream whenever possible. As a rule they nest in small colonies, but are very local in their haunts, and one may walk for miles on end on certain moorlands without seeing a single one of the species. A second brood is, I think, rarely reared, but as late as July 5 I have found a nest containing small young, which were in all probability the result of a second clutch. When their nesting season is over, the birds, young and old, form into small parties, and may often be seen frequenting the high grounds of the mountains. As showing the harmlessness of the kestrel where bird life is concerned, it may be mentioned that a favourite

nesting haunt of a ring-ousel is a rocky ravine less than half a mile long, where she nests within a stone's-throw of a kestrel's nesting ledge. The ousels seem to have no fear of the hawk, which, on its part, never molests them, but confines its attention to mice and field voles, with the down of which its nest is thickly covered.

The Tyranny of the Tern.—The tern is a bird with which I am very familiar, and I have had ample proofs of its overbearing conduct towards its neighbours. I remember once, while photographing a colony of common terns, seeing a luckless rook attempt to fly through the colony. He had only progressed a few yards, however, when he was beaten down and fell to the ground. The terns apparently had some idea of chivalry, as when the bird was on the ground they refrained from attacking him; but directly he attempted to fly off, the whole colony were after him instantaneously, and this time, so far as I could make out, the luckless bird fell to the ground in sheer terror and there remained. Having discovered a twite's nest, I placed my handkerchief on the ground to mark the spot and then returned to where I had left my camera, a few hundred yards away. I soon became aware of a great commotion among the terns, all of which assembled above the inoffensive handkerchief, evidently under the impression that it was an enemy of some sort. After shrieking and swooping down on the handkerchief for some time, they at last began to realise that it was quite harmless, and gradually gave up their fierce attacks. A kestrel sailing by was mercilessly mobbed, and a stray cuckoo had a very bad time of it, the terns seemingly mistaking it for a hawk and mobbing it furiously. It is to the credit of the terns that they are quite devoid of fear, and will attack even the peregrine falcon should he come near the nesting grounds. I have also seen them in hot pursuit of grouse and curlew. The black-headed gull is the only bird which is not afraid of their attacks, for I know of a small colony of these birds which nest on the fringe of a colony of some 2,000 terns and make periodical raids on the eggs of these latter. Seizing its opportunity, a gull will dash into the nesting ground of the terns, and, securing an egg of one of the latter birds, will fly off at top speed with a screaming mob of sea swallows in hot pursuit.

The gull carries the egg in an ingenious manner, sticking his bill into it, and absconding with it thus impaled. Terns are very easily excited, and often, when a young tern is making strenuous efforts to fly, but is unable to succeed, the whole colony appear on the scene, and, hovering a few feet below the struggling bird, keep up an incessant shrieking, as though uttering words of advice to the youngster. Although both Arctic and common terns are very pugnacious, the lesser tern is quite inoffensive, so far as my experience goes, and rarely swoops at anyone disturbing its nesting site, but flies round excitedly, uttering a twittering note which is not unlike that of the swallow, though considerably harsher than the cry of the latter bird.

Nesting of the Dotterel.—It was recently my good fortune to obtain some photographs of the dotterel at her nesting site on the summit plateau of a hill just under 3,200 feet in height. I had some difficulty in discovering the nest, as the hen bird was very wary and endeavoured to lead me away from the spot; but after a while she settled down on her eggs contentedly. The nest, if such it could be called, was a slight depression lined with a few dried blaeberry leaves and one or two pieces of lichen, and was in a very exposed situation. Like another nest I found recently, it was built near to a sheep fence; and while I was photographing the nest the bird ran backwards and forwards from one side of the fence to the other. The nest contained three eggs, in colouring very similar to those of the golden plover, but not so pear-shaped as those of the latter bird. It is curious that the dotterel should lay only three eggs, whereas most wading birds have a clutch of four; but I believe that a dotterel's nest containing the latter number of eggs has never been discovered. After I had been at the nest for some time the mother-bird—as I have said—became quite confiding, and walked round me inquiringly, uttering her soft whistling call-note, "twee, twee," with an occasional purring note at the end. Like the golden plover, she often stood still for a moment, then suddenly jerked her neck backwards, sometimes wellnigh losing her balance in so doing. She did not seem to be greatly disturbed, however, and often picked up food with a complete indifference to my presence. The eggs were

chipping, and the young birds could be heard working inside the shells, but a strong sun was shining, so the mother bird seemed to think they would come to no harm; at all events, she was in no hurry to return to the nest. During this time the cock bird did not put in an appearance; in fact, I never once saw or heard him. I revisited the locality about a fortnight afterwards, and soon found the dotterel with her young close to the spot where the nest had been situated. Strangely enough, she was very much wilder than before, and would not approach nearer than 100 yards. I watched her for hours, but she did not seem to mind my being near her young ones, as she stood perfectly motionless for long periods. I heard more dotterel calling in the vicinity, so there were probably one or two pairs nesting. One very rarely, indeed, finds a dotterel's nest on the slopes of a hill; it is placed almost invariably on the summit plateau, and rarely below the 3,000 foot line. One reason for this is, I think, the fact that the birds dislike to nest among grass or heather of any length, as to run about quickly they must have level ground with only very stunted grass and heath. The dotterel usually carries off the egg-shells some little distance when the young are hatched out; but some birds, such as the curlew and woodcock, do not take the trouble to do this, and leave the broken egg-shells in the nest. About the commencement of October the dotterel nesting on several adjoining hills collect into one large flock, and the migration south is commenced.

Eagles at Home.—It was on April 17, 1910, that I visited an eyrie on a wild hill-side at a height of well over 2,000 feet. The weather was bad, with three inches of snow on the low grounds, so a cycle run of seventeen miles was not exactly an easy undertaking. Still, after some exciting experiences, I reached the lodge where the road came to an end and commenced the climb to the eyrie. On leaving the road I found a depth of half a foot of snow on the moor, and soon this increased to a surprising extent, until, before the eyrie was reached, I had to fight my way through an average depth of thirty inches of soft snow, every now and then sinking deep into a deceptive wreath. Even the tall juniper bushes with which the hill is covered did not appear

YOUNG COCK EAGLE

above the snow, and the whole hill-side was an expanse of spotless white. It can be imagined that under these conditions walking was none too easy, and I was extremely glad to reach the nesting site of the eagles. Soon I had the satisfaction of seeing the cock bird launch himself off a pinnacle of rock and soar away over the hill, and as I approached nearer the hen rose from the eyrie and followed her mate.

Exposed Nesting Quarters.—I thought it curious that the male bird should have been beside the nest, for he very rarely approaches the eyrie when the hen is brooding; but through the glass I could see the eyrie, deep in snow, but with a small hollow in the centre where the eagle had been sitting. I naturally imagined that she had eggs; but to scale the rock was a very difficult undertaking, as every ledge was buried deep in snow, and a false step would have resulted in most unpleasant consequences. However, I at length reached a spot from which the eyrie was visible, and, with great expectations of securing a unique photograph, peered cautiously into the nest—to find it empty! The hen eagle had evidently been keeping her eyrie free from snow, so as to have things ready for the eggs when they appeared, and this accounted for the presence of the male bird.

The Nesting Site Described.—The locality is an ideal one in every way for the king of birds. From the nest an extensive view is obtained of the mountain ranges on Speyside, hill after hill rising sharply against the sky-line, and westward the Cairngorms and Lochnagar are seen. The rock is most exposed, and on a stormy day the clouds are whirled through the gorge at the speed of an express train. In the vicinity the ptarmigan have their nests, seemingly quite unperturbed at the proximity of so powerful an enemy, and while I was at the eyrie they were croaking all around me. The return journey was made under delightful conditions, a hard frost prevailing and the wind having completely dropped. I noticed that although during the ascent not a curlew was to be seen on the high grounds, during the downward journey they were met with almost immediately I left the eyrie, and their beautiful wailing cries

were heard constantly on all sides, while in the solitary plantation in the district a mountain blackbird was piping his wild song to the setting sun.

The Marauding Hoodie.—If there is any bird a keeper heartily detests, it is the hoodie crow, and excepting in deer forests they have a very poor time of it, as no keeper on a grouse moor rests till he has exterminated or driven away the robbers. There is no gainsaying the fact that even a single pair of hoodies will work an immense amount of havoc among the nests of the neighbouring birds, especially when they themselves have young ones. A stalker told me that one year a pair of hoodies had their nest in the neighbourhood of a moor, and as many as eighty-six eggs of various birds were picked up in the vicinity. They ranged from those of the red grouse, pheasant and mallard to those of the domesticated turkey. As probably only half the number of eggs actually taken were discovered, it is fairly safe to say that this one pair took between them 200 eggs; so it is quite easy to understand the enmity existing betwixt the keeper and the hoodies. The latter are so wily that it is very difficult to get a shot at them, and often a keeper sallies out, gun in hand, on a moonlight night in the hope of getting a shot at the hoodie on her nest, but even on these occasions she is frequently off and away before he is within shot. On account of this persecution, the grey crows have latterly taken up their abode in the vicinity of towns, where, although their eggs may be harried, they themselves are free from the gamekeeper's gun. In the deer forests they are usually left undisturbed, as here they can do no harm, and are a distinct use in devouring the remains of any animal which may have perished on the hills. After a stag has been shot, the "gralloch" immediately takes place, and stalkers have told me that almost as soon as the stag has fallen the hoodies appear as if from nowhere and wait patiently for their meal. Although for the most part subsisting on the carcasses of animals, the grey crow will at times attack young birds, and an instance came before my notice recently of one attacking and killing a half-grown red grouse. A hoodie and a cock grouse were observed to be fighting hard, and upon going up to the spot a young grouse was found

lying quite dead, with a hole through the side of its head and another just under its wing, both made by the hoodie's sharp beak.

Unusual Nesting of the Long-tailed Tit.—In the spring of 1908 I had under observation a pair of long-tailed tits which nested in an unusual manner. As early as March 30 the nest was all but completed, and on April 14 there were two eggs in it. Then to all appearances the birds deserted, and were not observed again until about May 15, when they were seen entering the nest with food for the young. They were photographed on May 26 and 27, and, as the birds had not left the nest on the latter date, the eggs cannot have been hatched out much before May 15. Now, on April 14 two eggs were in the nest, and these eggs apparently lay there for nearly three weeks before incubation was commenced, and survived a night frost of about 15 degrees. This very severe frost naturally retarded vegetation considerably, and the birch trees round the nesting site were not in leaf till well on in May. As the tits feed their young on flies, caterpillars, etc., taken from the leaves of these birch trees, it would almost appear as though they knew food would be difficult to procure for their young ones if the eggs were hatched out early, and so left the latter unbrooded for more than a fortnight. Both parent birds were extremely tame when bringing food to their young ones, and, although I had rigged up my camera within about six feet of the nest and was standing in full view, both cock and hen came to the nest with very little sign of fear, and I managed to get some fair snapshots. The first day I was at the nest both birds came with their bills full of flies, etc., every three or four minutes, but the next time I had the nest under observation they were more irregular in their journeys, at times being away six or seven minutes. The morning was sunless, and this probably had the effect of making food more difficult to obtain. Usually they arrived at the nest together, and cock and hen were equally confiding, both feeding the young in turn, and then flying off together in search of more food after hopping about on the branches within a couple of feet of me and scolding me angrily. Towards the end of the half-hour during which I watched them they did not go far from the

nest, but caught flies from the branches of the birch trees quite near and returned with them to their young. The times they visited the nest during the half-hour were 9.37, 9.50, 10, 10.3, and 10.5 A.M. At one time, when they had just returned to the vicinity of the nest with food, a cock chaffinch on a tree near by began to utter his alarm note repeatedly, and this made the tits so nervous that it was long ere they could summon up courage to go to the nest, and when they had done so they scolded me most emphatically. I noticed that sometimes the parent birds brought sufficient supplies to feed only one of their young, but at other times they divided the food between the two. Once they both were at the nest together, but usually the cock waited near while the hen fed the young, and vice versa. The nest was in rather an unusual position—in the fork of a birch tree some eight feet from the ground, but harmonised so well with the surrounding lichens that it was difficult to realise it was not part of the tree itself. Some years back I had another instance of the curious nesting of the long-tailed tit. One day I took from a nest one of the eggs, which was quite fresh and apparently newly laid, and two or three days later found that the nest contained young birds!

SUMMER

A Summer Thunderstorm.—I was on the hills one July day, and, after a hot and sunny morning, a storm burst very suddenly. Where I was there was very little rain, but the forked lightning was exceptionally brilliant, and the thunder right overhead. Half a mile farther up the valley I saw the rain descending in a solid sheet, and when the storm had abated one side of the hill was seen to be quite white, while the other had altogether escaped the hail. On reaching the spot where the storm had been raging, I found the burns coming down in tremendous flood, carrying trees and stones on their brown waters. A bog where lapwings and redshanks had young was quickly flooded, and it was distressing to see the young birds fighting for their lives in the rapidly rising loch, while the parent birds hovered overhead encouraging them with anxious cries. I attempted to rescue some of them by wading out into the water, but was too late to save any lives. I noticed, however, that the young redshanks seemed very much more at home in the water than the lapwings, and easily swam to safety, whereas the struggles of the young green plover were feeble and ineffectual.

The Red Deer.—By the end of June most of the hinds have dropped their calves, and in the majority of cases these are able to run almost as well as their parents within a few days of their birth. I once had a tantalising experience with a small calf. He was found lying half concealed in a peat moss, and did not move whilst the camera was being rigged up. When, however, the black focusing cloth was brought into use, he evidently thought discretion the better part of valour, and galloped away at top speed. A calf four days old is able to keep up with its mother with ease, and it is only when they are first born that they lie perfectly still. For

the first day or two the mother visits them only at daybreak and perhaps last thing at night, leaving them hidden in long heather or rushes during the day. A stalker mentioned to me that he once came on a deer calf asleep on a hill track and succeeded in capturing it. The calf screamed loudly, and in a very little time a large number of hinds rushed up and "went for" the stalker, who was forced to leave the calf and beat a hasty retreat.

Sparrow Hawk and Magpie.—I was once witness of a most interesting combat between a sparrow hawk and a magpie. The scene of the battle was far up a Highland glen, and my attention was first drawn to the fact that something unusual was happening by a confused noise proceeding from some ancient pine trees fringing the burn. Soon I saw a highly excited magpie being hotly pursued in and out of the trees by a sparrow hawk; but the latter bird did not seem to have any great anxiety to come to close quarters with the fugitive. It almost seemed as though the birds were treating the whole affair as a joke, for ultimately the magpie flew silently away without any interference on the part of the hawk.

Birds Sheltering from the Rain.—Although not generally realised, it is a fact that a great many birds have an intense dislike to rain, and a short time ago I had good evidence of this dislike. While motoring over a hilly road through unbroken tracts of moorland, I constantly surprised birds sheltering in gravel-pits, etc., from the fury of the storm. Early in the journey I came upon a brood of grey crows crouching to leeward of a sand-pit, and they seemed very reluctant to move. A kestrel was next disturbed in his shelter, but some oyster-catchers seemed to enjoy the storm. A small colony of common gulls, although not actually sheltering from the rain, appeared most miserable, and flew about in a dejected manner, sometimes standing on the tops of posts and facing the storm.

On the Peregrine.—This dashing hawk is now so rarely met with in the east or central districts of Scotland that I was pleased to see one of the species in July sailing above an extensive snow-field on the Cairngorm hills. Surrounding the snow on three sides were formid-

IN THE PTARMIGAN COUNTRY, JUNE

able precipices, so it is more than likely that the bird reared a family on one of the ledges of the rocks. The delicate flight of the peregrine is in marked contrast to that of his heavier relative, the golden eagle, yet each bird possesses a peculiar fascination in his wing movements. A stalker recently narrated to me how he shot a peregrine on the nest, and endeavoured to climb down to the eggs. He succeeded in reaching a point within two feet of the ledge, but further progress was impossible, and so he returned home for a ladle with which to scoop up the eggs. Although his house was only a short distance away, he found, on his return, that every egg had been sucked by the jackdaws, which abounded in the neighbourhood. It is gratifying to hear that the peregrine has succeeded in establishing himself in a certain part of the south coast of England, which shall be nameless, and on the west coast of Scotland he is likely to hold his own for many years to come.

Eagles and Foxes.—On one of my recent expeditions I came upon the hair of a fox—probably a youngster—which had apparently been killed by an eagle. There were no remains of the animal near, but there was ample evidence that a fierce struggle had taken place, and it is quite likely that the fox had been carried off to the eagle's eyrie. Such an incident is extremely rare, and the stalker accompanying me did not remember a similar case. He pointed out to me two cliffs to which he asserted the eagles sometimes carried their young before the latter were able to fly; but at the time of my visit both the sites were unoccupied. A curious misfortune happened to an eagle a short time ago. Some surfacemen who were at work on the Highland Railway noticed in an adjoining field an eagle which had so gorged itself that it was unable to fly, and was easily overtaken. It defended itself bravely, however, but ultimately was overpowered and captured, though what its fate was must be left to the imagination. A Highland stalker some time ago was spying through his glass at a fox which was lying on a hill-side and sleeping soundly. The spot the animal had chosen for its nap was one where a certain eagle was in the habit of alighting, and soon the king of birds came along, and was just on the point of settling when he espied Reynard. Immediately he

shot up in the air in a state of great alarm; but the fox merely looked up inquiringly, and then fell fast asleep once more.

The Manœuvring of Dunlin.—Every ornithologist must have been struck by the remarkable manner in which a flock of dunlin wheel and swerve, every member of the flock making the turn instantaneously, without a fraction of a second's hesitation. This, to a certain extent, holds good with respect to many of our gregarious birds, such as golden plover and starlings; but none have the gift developed to so remarkable an extent as the dunlin. Various explanations have been put forth to account for the phenomenon, as before the flock makes a sudden swerve the leading bird, so far as can be made out, utters no note of any kind, but the remarkable manœuvre is executed in silence. A possible explanation seems to be that the birds have the power of communicating their thoughts to each other, and that it is by telepathy that these instantaneous swerves and turns are made possible. An ingenious, though, I think, a far-fetched explanation has been advanced to the effect that the birds have not each a distinct individuality, but that the whole flock is dominated, as it were, by one soul. This theory, though quite plausible when the birds are flocked, could hardly stand when the dunlin was either paired or single, as a solitary bird would have no power in itself if this argument held good. But be the reason what it may, the manœuvring of a flock of dunlin is one of the most extraordinary things in the bird world.

A Rook's Strategy.—In a certain district that I know of the rooks have rather a poor time of it at the hands of the herring-gulls, should they be lucky enough to obtain anything specially tasty in the way of food. One day I noticed a rook—carrying in its bill a large piece of bread—being relentlessly pursued by a herring-gull, which would soon have obtained the choice morsel had not the pursued bird suddenly become possessed of a brilliant idea. A large tree was growing near, and to this the rook flew post-haste, scrambling through its branches and perching where they were most dense. The gull was quite astonished, and, being unable or disinclined to perch on the tree, flew away, looking extremely sorry for itself.

Willow Warbler Feeding Young Starlings.—A curious instance of one bird feeding the young of a different species came under my notice lately. A starling had her young in a hollow tree, and was assisted in the work of feeding her brood by a willow-warbler. Although by no means common, this co-operation among birds of different species has been several times noted before, and Mr. Kearton, in one of his books, shows a most interesting photograph of a robin feeding a nestful of young thrushes.

Curious Nesting of the Ringed Plover.—On May 4, 1909, I discovered a nest of the ringed plover containing four eggs and placed under a tussock of bents. On revisiting the spot on July 12 I was very much surprised to find that a second clutch of four eggs had been laid in the same nest and that the bird was sitting. This was almost exactly ten weeks after I had found the first nest, and it would be interesting to know whether the same bird had reared one brood and then had returned to lay a second clutch. The young left the nest about ten days afterwards, and though one afternoon the eggs were not even chipped, by next morning the chicks had hatched out, and the only marks remaining were their footprints in the wet sand!

Protection of the Black-headed Gull.—In the season of 1908 the protection of the black-headed gull was removed in certain counties, and as a result the birds had a disastrous time of it. In some places the keepers broke the eggs, and at one nesting site I noticed a man with a basket busily engaged in filling it with eggs, while a gull with both legs broken by shot lay helpless in the water. The black-headed gulls are, undoubtedly, extremely common, but must soon decrease after a year or two of this treatment. Most keepers look upon them as deadly enemies to grouse and pheasants; but although it is true that they do occasionally take the eggs of these birds, still I think this is by no means a common occurrence, provided other food is plentiful. On the other hand, they do the farmer an immense amount of good by feeding on the deadly grub of the "daddy-long-legs," or crane fly, which is so injurious to the young oats. Only this afternoon (June 3) a friend gave me a black-headed gull —now exploring the garden—whose wing was broken, probably

by a charge of shot; but, apparently, keepers are not the only enemies the gulls have to fear, for a flock of angry lapwings were seen pursuing a gull, and actually beating it to the ground. My friend also furnished some interesting information as to when the gulls commenced nesting. On April 17, 1908, none of the birds had commenced to lay, but on April 21 a colony had eight nests—seven with one egg and one with two—and by the first days of May the majority of the gulls were brooding, but, owing to the nests being robbed repeatedly, few young were hatched out.

An Eaglet's Third Eyelid.—On first inspection of the photograph of the golden eaglet which faces this page, one would imagine that the bird was blind—at least, this has been the general opinion of those persons to whom I have shown the photograph. This, however, is not the case; but the bird happened to have drawn that curious skin-like membrane—the third eyelid—over its eye at the instant the photograph was taken. This third eyelid, or nictitating membrane, as it is often called, is well marked in the case of the eagle, and is drawn by the bird over its eyes in the presence of fierce sunlight, so that it is probably because of this that the ancient legend of an eagle being "able to look into the face of the sun" originated, for I believe it to be a fact that the eagle, when this third eyelid covers the eye, is literally able to look straight at the sun. This particular eaglet was continually rolling its eyes and drawing the third eyelid rapidly over them with weird effect, but it was remarkable that the shutter should have been exposed at the critical moment without any such intention on my part. The eaglet, after a few visits, began to show quite friendly feelings towards me, going so far as to devour banana skins, and even pieces of paper bag, with evident relish. One day, while I was photographing him, his mother suddenly appeared over the brow of the hill, bearing a fine grouse in her talons. Upon catching sight of me, however, she rose abruptly and sailed off, to the intense indignation of her offspring, who looked up at her in pained indignation, ultimately giving vent to numerous yelps of dismay, to which, unfortunately, the parent bird paid no attention. I imagined that on my departure the mother would return with the grouse; but such was not the case, as when

HEAD OF GOLDEN EAGLE

HEN EAGLE—SHOWING THE THIRD EYELID

I revisited the spot some hours later the eaglet had yet to receive a meal, and I felt very guilty of having robbed him of a most substantial lunch!

Nesting of the Common Gull.—On June 24, 1910, I visited a mountain loch appropriately named Loch-nan-Eoin (Gaelic for "Loch of the Birds"), where a large colony of common gulls resort every spring to rear their young. The loch lies very high—not far short of the 3,000 foot level—and ptarmigan nest quite close to the shores. Perhaps 100 pairs of common gulls occupy the two islands the loch boasts of, and as I crossed the ridge and looked down at the loch I could see the birds dotted over the islands like miniature snow-wreaths. Until I approached to within a couple of hundred yards the birds were undisturbed by my appearance; but then a couple, who seemed to be on the watch, swooped towards me, calling angrily. As I reached the shore the whole colony rose in a body and, after flying around for a few minutes, settled on the opposite hill-side. Hoping to obtain some photographs of the eggs or young, I waded across to the larger island, but without any success, for there were no signs of eggs or young gulls, though many nests were newly built and all ready to receive the eggs. Hoping for better luck, I crossed to the smaller island through water which reached up to my waist; but the total find consisted of one solitary egg, perfectly fresh and evidently laid that morning. It seems impossible that the gulls should only have commenced to lay in the last week of June, and the explanation of these empty nests was, I fancy, the fondness of certain shepherds for gulls' eggs! It was noticeable that not a single nest was built on the mainland, probably owing to the proximity of foxes and other marauders. The stalker who accompanied me stated that the loch is usually frozen over in May, so that the gulls are compelled to remain on the lower grounds for quite a month after their arrival from the coast, and haunt the ploughed fields on the river-side, in company with their black-headed brethren.

Young Eagle and Ptarmigan.—While on the summit plateau of Lochnagar, I once had an interesting view of a young golden eagle pursuing a ptarmigan. The eagle was, of course, strong on the wing, but he was readily

made out as a bird of the year by the numerous white feathers on his plumage, and also by a certain clumsiness in his flight. Apparently he had been perched on a rock above me, for he soared close over my head, and was disappearing over the shoulder of the hill when suddenly he espied a ptarmigan quite near him. He immediately swerved off and descended upon *Lagopus mutus*, which, however, shot off at express speed round the side of the hill, and the eagle, somewhat dazed, sailed off after it, both pursuer and pursued being lost over the shoulder of the ridge.

A Cormorant's Voracity.—A short time ago I had occasion to watch the fishing operations of a cormorant in an estuary famous for its sea trout, and was much struck by the extraordinary ease with which it captured its prey. I had it under observation only for four or five minutes, and during that short period it had captured four sea trout, all of considerable size. After being under water for a few seconds, the bird would reappear with a fish wriggling in its bill; but in spite of the victim's desperate efforts to escape, it was deftly swallowed, and after a few gulps the cormorant would resume its fishing operations. One of the sea trout gave considerable trouble, however, for it struggled violently for some moments, but was deftly placed so that its head pointed down its captor's throat, and thus its own struggles assisted the bird to swallow it. After a time the cormorant raised itself in the water, flapping its wings vigorously as though to assist in packing away its repast, and then rose heavily and winged its way up stream.

Young Bullfinches.—Some young bullfinches of my acquaintance had an eventful history. They were a second brood, and were hatched about July 15, 1909. The weather at that time was exceptionally windy, and during one of the prevalent gales the nest was capsized, and I found the five half-fledged young lying on the grass beneath the tree. As the nest was in a very dilapidated condition, I placed it inside an ancient nest of the song thrush and fixed it up as firmly as possible in the tree. When the parent birds came with food I was surprised to see first a cock and hen together, and then, flying immediately behind them, a second cock. It looked sus-

piciously as though the latter bird were attempting to alienate the affections of the hen from her mate; but this statement may be ruining a bullfinch's reputation without cause. The adult birds at first were extremely surprised to see that their brood had disappeared from the position where they had left them, but soon discovered them in their new quarters. It was noticeable that the hen bird never covered the young at night, nor did she even appear to roost in the vicinity—a fact of some interest.

The Gallows Tree at Braemar.—A few miles west of the Highland village of Braemar, and almost at the entrance to Mar Lodge, is an ancient pine tree which has a history of exceptional interest—an interest dating back to the times when the clan spirit was all-powerful in the Highlands, and when human life was held far more cheaply than at the present day. It was in the lifetime of Donald Farquharson, son of Fionnladh Mhor Mac Fhearachar, that the hanging of Lamond of Inverey took place at the gallows tree. Donald of Castleton, as he was called, must have lived and died between the sixteenth and seventeenth centuries, as his father, Fionnladh, fell at the battle of Pinkie, 1547. As a result of a raid on Deeside, Lord Huntly, desiring to punish the freebooters, called on the Farquharsons and Gordons of Abergeldie to apprehend and punish those responsible, and, either rightly or wrongly, Lamond of Inverey was convicted—on the evidence of sheep found at his stronghold by the Ey. It is stated, however, by some that the sheep were placed there to inculpate him, but "so open was his guilt that no proof was needed, and he was therefore led to a stout pine on a little knoll, a short distance west of Mar Lodge Bridge, and hanged on one of its branches." The following account is quoted from the well-known "Legends of the Braes o' Mar," by one Grant, who lived at Micras, opposite Abergeldie. The book was published in Aberdeen in 1861, and, although often unreliable, the story of the gallows tree as given in it is in all probability correct: "His mother, a widow, followed the party that marched him off, praying them to save her only son; but seeing that her tears availed nothing, and considering the Clan Fionnladh responsible for his death, she predicted the downfall of the

clan in a Gaelic rhyme, one verse of which I have translated by a poem:

"'This tree will flourish high and broad
Green as it grows to-day,
When from the banks of bonnie Dee
Clan Fionnladh's all away.'

And this prophecy is regarded as now accomplished. Anyone will show you the dark doom's pine; but where are the Monaltries, flowers of chivalry; the Invereys, indomitable in war; the Auchendrynes, stout and true; the Balmorals, glorious as fleeting; the Allanquoichs, ever worthy; and the Tullochcoys, heroes to the last? All and every one of them are gone. Invercauld became extinct in the male line, and this, it is held, sufficiently fulfils the prophecy. Finzean—as not at all concerned in the transaction—may be fairly held not to come within the scope of the malediction."

I am greatly indebted to Miss Farquharson of Invercauld for the details of this legendary incident, which brings vividly before us the great superstitions of the ancient Highlanders and their almost universal belief in the supernatural, a belief to which it seems that the present-day generation is tending to return.

Contents of an Eagle's Casting.—On a certain ledge of rock commanding an extensive outlook, a cock eagle is in the habit of perching motionless for hours on end as he scans the corrie and the pass 1,000 feet beneath him. A couple of castings which I examined recently contained the following interesting and widely divergent substances: Several ptarmigan bones and claws, the practically intact bill of either a grouse or ptarmigan, a piece of the stomach of a small bird, probably a meadow-pipit or wheatear, a collection of blaeberry leaves, club moss and small stones, and hundreds of ptarmigan's feathers. The most extraordinary find was the occurrence in both castings of pieces of egg-shell. It seems absurd to imagine for a moment that a golden eagle would stoop to egg-stealing, and the most probable explanation is that the ptarmigan was laying when captured, and that the king of birds devoured the eggs with the other parts of the bird.

Some Bird-notes at 1,600 Feet above Sea-level.—Some time ago, when staying for a few days at a shooting lodge, 1,600 feet above the level of the sea, I made some interesting notes on the bird life to be met with at that elevation. On the shores of the loch I saw the sandpiper, evidently nesting, for she was most anxious when I approached her. One day I noticed a pair of divers flying round the loch at a great height. As the weather was stormy, with a high wind from the north, they were very likely temporary visitors, and the stalker informed me that in the autumn flocks of migrating birds often rest on the loch on their journey south—he even assured me that he had not infrequently seen the little auk at that season. On the hill-side immediately above the loch, several pairs of common gulls had reared their young, which had reached the stage when they were able to swim easily though still weak on the wing. The gulls imagined that everyone passing near the nesting site had evil designs on their young, and consequently uttered the most angry cries whenever a human intruder appeared on the scene. When not busy in the defence of their families the gulls seemed at a loss to know how to pass the time, and stood for hours on the tops of some posts about ten feet in height. Every now and then they would sail round the stalker's lodge to see if any food had been thrown out for them; but even if they did discover some dainty morsel, they were so well fed that they were in no hurry to eat it. As early as 2 A.M. the gulls would begin to call, and very weird was the sound in the dim light of the early morning. Although July was half over, a pair of redshanks still tended their young in a bog near, and I noticed another brood of three young birds just able to fly. The oyster-catchers were here also, and were tending half-grown youngsters, while there were numerous lapwings about, and, of course, a great number of grouse. Of smaller birds there were wheatears and meadow-pipits, and an occasional twite. A pair of pied wagtails had their nest in the porch of the lodge, and their young were on the point of flying. We had occasional visits from the eagle, and the stalker stated he had several times seen what he imagined must be a buzzard flying up and down the glen, but we did not have the good fortune to see this latter visitor.

Concerning Young Eiders.—In one instance lately I noticed as many as a dozen old eiders together, and all their young appeared to be mixed up indiscriminately. When the broods moved off at my approach, one little eider was left behind, and, strangely enough, did not seem to care in the least, as he walked about slowly and deliberately, not even looking at the rest. I saw him several times during the day, and always alone. Finally, he swam out into the estuary of the river and was carried rapidly out to sea, apparently not in the least alarmed and quite cheerful. Another brood of young eiders was on the sands, and on my approach made for the sea. The waves were coming in strongly, and as the little birds entered the water they were dashed about and thrown up on the shore with each breaker. Many of the waves broke right over them, and one would have thought they would have been seriously injured; but ultimately they got beyond the disturbed water, seemingly none the worse. Although by the 1st of August very few young eiders are able to fly, a great many are shot by the shore gunner, so it would be well on humane grounds to extend the close time for the eider duck till the middle of August at least.

A Young Eagle's Soaring Powers.—I recently had a good illustration of the soaring powers of a youthful golden eagle. A week previous to our visit the youngster was still in the eyrie, but as we approached the nesting site we saw him perched on the top of a Scotch fir. He was quite careless of our presence, and it was with difficulty that we could induce him to leave his perch. It is usually the case that when a young eagle is disturbed in this way he can fly down a hill-side, but when he has reached the bottom he is unable to rise. In this instance, however, the bird showed quite exceptional flying powers. His first flight was down the hill-side, and he alighted on the top of a tree. We pursued him, and he again took wing. This time his flight was up the hill, and he soon alighted among some heather. We imagined that he would have some difficulty in rising, and, as a matter of fact, he allowed us to approach within a few yards before he rose and sailed right over our heads, only a few yards above us. His line of flight took him down to the lowest part of the glen, and it seemed as

though he would be forced to descend at the burn-side, when, with a great effort—he was only a few yards above the ground at the time—he sailed up on a gust of wind and alighted in the midst of a very dense fir. From this point of vantage all efforts failed to dislodge him, and from his perch of comparative security he watched, with calm indifference, sticks and stones of various sizes fly past. He remained quite motionless in the midst of it all, and we ultimately left him without having secured the photographs we were after.

Deer and a Change of Weather.—The heat wave of 1911 broke in the Highlands on July 14, and the last fortnight of the month was very unsettled, with a good deal of rain. I happened to be on the hills on the 26th of the month, and towards evening large herds of stags began to make their way down to the low grounds. Every now and again they paused in their descent and gambolled about like calves, occasionally charging each other in a playful manner. At times a large herd would stand stock still for a few moments before rushing headlong down the hill-side. By dusk all the stags in the neighbourhood had descended to the pass. The stalker who was with me was of opinion that a storm was brewing, but this seemed very improbable, as the glass was high and rising. The deer on this occasion turned out to be better prophets than the barometer, for during the night the wind rose, and next morning broke very stormy, with a high wind and heavy rain. The mist was low on the hills, and continued so till late afternoon, when the sun broke through and the weather hardened somewhat.

Climbing Powers of Deer.—I had occasion recently to remark on the wonderful agility shown by a hill stag in ascending the face of a steep, almost perpendicular, corrie. My attention was drawn to the beast by the rumbling of a large rock which it had dislodged in its ascent, and it seemed wellnigh impossible for the stag to climb over the slippery slab of rock and reach the top of the corrie. Not only did the animal surmount the difficulty, but it made extraordinary good time up the steep face, and on reaching the summit trotted out of sight over the plateau as if in nowise wearied by its exertions.

Magpie *v.* Squirrel.—I was once a witness of an amusing encounter between a squirrel and a magpie. Among the branches of an ancient oak tree, standing by itself in the centre of a field, I noticed a squirrel and magpie together. The latter seemed to be very interested in the squirrel, as every now and again it would hop inquiringly towards it; but the squirrel would then leap at the magpie, causing it to retire immediately. So far as I could make out, the two were having a kind of game, as after some minutes of running backwards and forwards the squirrel stealthily ran down the trunk of the tree, keeping the trunk between itself and the magpie. The latter watched intently for the squirrel to appear, but the latter had a wily manœuvre up its sleeve, for on reaching the ground it ran across the field at top speed and hid in some trees. After a time the magpie seemed to suspect something, and, finding the squirrel had left the tree, flew across in the direction it had taken, disappearing in the wood.

Migration of Geese.—A curious incident, and one well worth repeating, was told me by the stalker at Derry Lodge, in the Forest of Mar. On August 4, 1910, he stated, a flock of wild geese were noted making their way north up Glen Derry, flying fast and at a great height. The glen is one often chosen by the geese on their spring migration, and apparently, after crossing the Cairngorms, they call a halt at Loch Mhorlich and Lochan Eilan in Rothiemurchus. But for a flock of geese to be migrating northward in early August seems an extraordinary occurrence. Could it be that they were hoping to rear a very late brood? It seems wellnigh impossible, and yet with what other object could they be travelling north? Possibly they might have been a detachment sent down from the north to spy out the land, and were returning with their report. This explanation, though improbable at first sight, has, nevertheless, facts to support it. I have myself seen a small body of common gulls make a journey in April to a Highland lochan well on to 3,000 feet above the sea, and have seen this same body of gulls returning to the low country, flying at a great height and calling repeatedly among themselves. They were seemingly returning with the tidings that the loch was still deep under ice, and that it was as yet impracticable as

a nesting haunt. Might not the geese have been returning with some such similar motive?

The Eagle at Home.—The eagle seems certainly to be holding its own in some of our larger deer forests, and I have lately had some excellent opportunities of studying the king of birds at his haunts. I had reason to believe that a pair of eagles were nesting in a certain Highland glen, where an eyrie was situated in olden days, but where the birds had not been known to nest for a considerable number of years. I had not been in the glen long before I saw an eagle flying slowly and steadily against the wind at a height of only a few feet from the hill-side. I surmised from its flight that it was a young bird, and spied carefully at all the trees near the head of the glen in the hope of locating the eyrie. Though I discovered the tree in which the birds formerly nested, I failed to see, even through the glass, any signs of an occupied eyrie. To my west was a steep hill-side, culminating in some small cliffs, and my hopes were raised by seeing an eagle soar on to a grassy ledge among the rocks above me. The light was poor, and it was some time before I made him out through the glass. I then discovered that there were two birds on the ledge, and had the pleasure of watching them for some time. Their light, tawny colour showed them to be old birds, but I could see no traces of an eyrie near them. One of the pair walked forward and stood on the edge of the ledge of rock as if meditating flight, while the second bird preened its feathers contentedly. Ultimately both eagles sailed gracefully from the rock, and, rising in spirals, were soon lost over the brow of the hill.

Eagle and Ptarmigan.—A few hours later, while passing a rocky hill where a pair of eagles have nested from time immemorial, I was pleased to see one of the birds—probably the cock—emerge from the cliffs near the eyrie and, after soaring to a considerable height and scanning the glen below, make off eastwards. On reaching the hill on the eastern side of the pass he altered his course, sailing across the hill and flushing a very large pack of ptarmigan. I naturally imagined he was out on a foraging expedition and would pursue and capture one of the fugitives; but he passed on without deigning to notice the frightened birds, and the ptarmigan made

off in all directions, croaking loudly. Having moved the ptarmigan, the eagle wheeled round and returned to his nesting site, disappearing in the rocks near the top of the hill. A little later on I saw him again, and when a pair of common gulls passed across the rock on their migration south, I watched their progress with interest to see whether the king of birds would dispute their way; but the eagle did not show himself, and the gulls passed on safely.

Song of the Willow Warbler.—Of all our songsters, I think that the small and insignificant willow warbler is the one which goes through the most "songs" in the course of a day. From 3 A.M. till 9 P.M. on a June day he may be heard uttering his sweet and plaintive refrain at intervals of only a few seconds. He is never idle, and even when singing he may be hunting for flies among the birch leaves. About the first week of July, however, his song gradually ceases, and he is heard no more for the next three or four weeks. After this silence he is heard once more during August, but does not sing so fully or often as earlier in the season. The latest date on which I ever heard a willow warbler's song was September 9; but usually they are all silent by the last days of August, preparing for their long journey to the South.

The Water-Ousel at High Elevation.—Though the dipper is essentially a bird of the mountain streams, it is very rare indeed that he is found above the 2,000 foot level. It was with some surprise, then, that I lately disturbed a pair of these birds at the great height of 3,700 feet above the sea. Not a mile distant was a large snow-field, which gave birth to the burn in which the dippers were feeding. At one point the burn flowed through a deep basin, the bottom of which was laid with the finest gravel, and it was here that I put up a solitary water-ousel. He flew down stream, and appeared to be making for the low grounds, but on my return journey I was surprised to find what were probably the same pair of water-ousels again working the pool. On this occasion, at all events, the dippers were not feeding on the ova or young of the *salmonidæ*, for at a slightly lower elevation the stream descended, half in spray, over a precipice of considerable height which no trout or salmon could possibly ascend. I am

YOUNG KESTRELS—BROTHER AND SISTER

of opinion that the water-ousel is often blamed unjustly for doing damage of which he is really innocent. The gravelly beds on which he is so frequently seen harbour many water-beetles and other aquatic insects, and it is on these to a great extent that the dipper feeds.

The Food of the Kestrel.—The kestrel is another bird which has the credit—or, rather, discredit—for many deeds of which he is quite innocent. It is a regrettable fact that the average keeper believes the very worst of the "red hawk," and will not hesitate to shoot him at sight. It is undoubtedly the case that a kestrel will carry off a young pheasant or two when these birds are being reared in large numbers, but the conditions in such a case are somewhat unnatural. In his wild state the kestrel will only exceptionally take a small bird, but lives almost entirely on large beetles and field-voles, with which latter the nest is usually well stocked. I have watched a pair of kestrels stooping repeatedly on a certain moor without ever capturing anything more formidable than a beetle, and this not only once, but on several separate occasions. Possibly the enmity between keeper and kestrel is largely due to ignorance on the part of the former. Not only are kestrels and sparrow hawks confused, but I have known of instances in which the kestrel has been mistaken for a peregrine falcon, and in one case I was shown a so-called young eagle in captivity which turned out to be an unfortunate young kestrel very sorry for himself!

The Effects of the Snow on Vegetation.—When on the high Scottish hills I have often been interested in noting the effect of snow on mountain vegetation. In some of the sheltered corries are snow-fields which remain on the hills till July or August, and it is in these situations—often extremely well sheltered and sunny—that the effects of the snows are clearly visible. The violet blooms normally on the high ground during the months of May and June, but where the snow lingers it is often in full blossom in July and even up to the second week of August. The marsh marigold is another flower which is commonly kept back a month or six weeks by the lingering snow. In 1911 I found a patch of these flowers in very luxuriant bloom during the latter part of July, and at a distance of less than 100

yards from a snow-field. To mention two other prominent examples, the cushion pink (*Silene acaulis*) and the starry saxifrage (*Saxifraga stellaris*) are flowers whose period of bloom may be retarded for quite two months. For instance, in 1911 the cushion pink was in flower in early June, but I came across a plant in full blossom early in August in a corrie where the snow remains throughout the whole year. I have also found starry saxifrage in full blossom in mid-September, though its normal month of flowering is July. The most interesting case of all, I imagine, is that of some moss which is found every autumn at the edge of one of the eternal snow-fields. Though the snow has never been known to disappear, or even to look like disappearing, it is interesting to visit the locality early in October, when the snow-beds are usually at their minimum, and to discover moss plants extending to where the snow was lying only a few days before. The moss plants are exposed for a very short space of time before snow re-covers them, and they have no time to form stem or leaf; yet they seem to maintain an existence in this way, and may well be relics of a vegetation which covered the hills when the climate was warmer than is now the case. The unusually fine summer of 1911 had, I noticed, the effect of causing isolated plants of the cushion pink to put forth a second bloom in late summer.

A Young Cock Eagle.—On June, 22, 1910, on revisiting an eagle's eyrie, I found that in this case the eagles had succeeded in rearing both young birds. The eaglets were in an exceptionally forward condition, being full-fledged, with even the feathers on the neck—usually the last to appear—well grown. One of the eaglets was a female bird, and was considerably larger than the other—a young cock. She was extremely fierce, strongly resenting my intrusion and making vicious stabs with claws and bill. She was open to friendly overtures, nevertheless, as when offered a piece of a grouse's liver she accepted it without hesitation. The young male eaglet was more than once nearly forced over the edge of the eyrie by the excitement of the larger bird, but appeared to be of a peaceful disposition and held on manfully while his companion attacked the intruders. I managed to get to very close quarters with him, and a camera was rigged up on the edge of the eyrie. In the

nest were the remains of numerous mountain hares, some of the dried-up feet being quite in a mummified condition. Two grouse were also in the nest, one half eaten, the other freshly killed and only partly plucked. During my visit the cock eagle was seen sailing around some distance off, but he had no food in his talons and never once ventured near.

The Ways of the Oyster-catcher.—Often on a summer evening a number of oyster-catchers will collect together on a field by the river and indulge in what seems to be a kind of game. Some observers go so far as to state that two of the birds are set apart as umpires; but, be that as it may, it is a fact that the flock run backwards and forwards with highly serious mien and with heads almost touching the ground. They call excitedly, and every now and again they pause somewhat as if to rest, but soon resume their play. It would be of interest to know how it was the oyster-catcher received its name, for to catch oysters surely is no great feat; but to open them is another matter, and the bird is certainly an adept in forcing limpets off the rocks. During the summer months, when the oyster-catcher is at its nesting haunts, it feeds principally upon worms, and a parent bird may often be seen flying to its young, calling loudly and carrying in its bill an enormous worm for their mid-day meal. Oyster-catchers are with us from early March until in August they take their departure for the coast.

A Swallow's Nest at High Altitude.—While visiting a Highland loch lying at a height of 1,600 feet above sea level, I was surprised to see a swallow emerge from an old shooting-lodge near the loch, and discovered the nest—containing one fresh egg—built on a ledge above the veranda. The nest was of somewhat curious shape, and closely resembled that of a grey wagtail which had nested on the same beam. The date—July 28—was distinctly late for commencing the cares of rearing a family, and the elevation—over 1,600 feet above sea level—is probably a record height for the nesting of the swallow in this country. The swift, I imagine, nests much higher, for it is constantly seen among the precipices of mountains between 3,000 feet and 4,000 feet high; but the swallow is more domestic, and rarely leaves the vicinity of farms and outhouses during the nesting season.

Some Notes on the Dotterel.—Of all our mountain birds the dotterel is probably the last to nest. I happened, on June 3, 1911, to flush a pair of these rare and interesting migrants in the vicinity of a huge snow-field some 500 yards in length and 40 feet in depth. From the agitated behaviour of the hen bird I surmised that a nest must be in the vicinity, but some hours' careful watching showed that the birds were in the "house-hunting" stage, and had not as yet decided on a nesting site. I watched through the glass the movements of the hen bird, and noted that she appeared to be testing certain likely spots with a view to constructing her primitive nest in the course of the next few days. With one situation she seemed specially pleased, and repeatedly sat on the summit of a grassy mound where, to all appearances, there had been a nest in a previous season. During her search the cock bird ran actively around, as though supervising operations, and when the heat became too intense he flew on to the surface of the snow-field. The elevation at which I saw the birds was not far short of 4,000 feet, and lying full to the westerly wind, which here sweeps across the hill-side with terrific force; but the dotterel is noted for its choice of exposed nesting situations, and, as a result of this love for the highest grounds, is one of the chief sufferers when a summer snowstorm sweeps over the hills. When their eggs are destroyed in this manner the dotterel rarely lay a second clutch, but form into large flocks and probably soon take their departure South.

Eagle and Merlin.—I imagine that eagles are on the increase in the Central Highlands. The dashing little merlin, on the other hand, is relatively scarce among the hills, but I was pleased to see one lately intently scanning the hill-side in search of prey. So eager was he that he did not observe that an eagle was bearing straight down upon him. It appeared as if the eagle had evil designs on the merlin; but suddenly the little hawk caught sight of the larger bird, and evidently received a severe fright, as he shot away at top speed from the king of birds. The latter however, paid no attention to him, and sailed across the valley, where he was joined by his mate. The merlin now rose to an immense height, till he was almost invisible to the

BLACK-HEADED GULL

eye, and after hovering for some little time swooped down to the ground, having evidently caught sight of some small bird or mouse on the hill-side.

Early Morning Songsters.—On the morning of a certain June 21 I made the following observations as to the hour at which the various birds commenced their song:—

	A.M.		A.M.
Blackbird	1.50	Wren	2.48
Thrush	1.51	Chaffinch	3.1
Robin	2.7	Hedge sparrow ...	3.17
Yellowhammer ...	2.19	Greenfinch	3.17
Willow warbler ...	2.24		

In the quiet June evenings the willow warbler is in song till shortly after nine, while the thrush and blackbird do not retire to roost till about an hour later.

A Black-headed Gull at High Altitudes.—Although often nesting at a considerable distance from the coast, the black-headed gull (*Larus ridibundus*) is not so essentially a bird of the mountains as its relative, the common gull. The latter bird is interesting from the fact that in certain parts of the Highlands it nests in the most exposed quarters close on 3,000 feet above sea level. The black-headed gull, on the other hand, though perhaps more of a land bird than the common variety, is very rarely met with nesting over 1,000 feet above sea level. I was rather surprised, therefore, to see in the summer of 1910 a black-headed gull, with a solitary full-grown youngster, in the very heart of the Cairngorm Mountains, and many miles from their nearest nesting site. In the early morning, on going to the door of the bothy where I had spent the night, I flushed the two birds, which were feeding only a few yards away. Later on in the day, while studying the snow bunting at a height of some 4,000 feet, I was surprised to see what was evidently the mother bird crossing the plateau quite near me. She was probably on a tour of exploration to try to discover a more suitable locality for her young one, for by next morning both young and old had left the neighbourhood. The note of the young black-headed gull is somewhat curious. It is an extremely wheezy effort, and instead of being a continuous note, as in

the case of the adult bird, is a series of small and very jerky call-notes, making one imagine that the bird is suffering from a pronounced sore throat. In winter the range of the black-headed gull is more restricted than is the case during the summer months. The birds in the winter months are commonly met with up to a distance of some twenty miles inland, but beyond this point they are almost unknown until they migrate inland in early spring.

AUTUMN

Local Distribution of Ptarmigan.—The ptarmigan's ways are as yet little understood, and it is, perhaps, on that account that it has such a fascination for the ornithologist. There is one spot with which I am familiar where one can count on flushing perhaps 100 ptarmigan any time that one cares to visit it, and yet 600 yards or 700 yards lower down on the same pass one never sees a single bird. The ground and feeding appear to be precisely the same; but the explanation is that the ptarmigan very rarely descends below the 2,500 foot line, even during the most severe weather, and the summit of the pass where they are found in such numbers is just over that height.

The Colour of the Blue Hare.—It would be interesting to know whether, in a mild autumn, the blue hare changes colour less quickly than during a snowy season. Apparently this is the case, for not very long ago, when I was on a hill noted for the number of hares to be met with on its slopes, it was remarked that some of the mountain hares had scarcely changed colour at all, whereas at an earlier period of the previous year, when the hill bore practically constant snow during the autumn, they were almost as white as the surrounding snow. Probably this is only a wise provision of Nature, for there is nothing so conspicuous as a white hare on a hill-side free of snow—in fact, I have noted one from a distance of nearly a mile with the naked eye—and a golden eagle could thus secure an easy prey.

The Rutting Season in the Forests.—In October the roar of the stags is heard in the forests, and at this season of the year a couple of stags will occasionally fight to the death; an old watcher told me he had twice come across stags lying with their skulls split completely in two. It is, of

course, the stronger animal that has the advantage in these encounters, and as a result these stags have a following of hinds two or three times as large as their weaker brethren. The roar of a stag is similar to the lowing of a cow, only it is a harsher call and pitched in a somewhat higher key. It is during autumn that the stags lose their natural shyness and occasionally attack a man walking through a forest alone. Some seasons ago a cyclist had a narrow escape in this way. He was pushing his cycle along a road which traversed a deer forest, when he suddenly became aware of a stag galloping towards him. The stag bore straight at him, and, knocking him to the ground, pursued its way without even turning its head. Fortunately, the cyclist was unhurt, but, as can be imagined, the results might easily have been most serious.

The Feeding of Grouse and Ptarmigan.—It would be interesting to determine whether the ptarmigan actually consumes more food than the red grouse. Such—superficially, at all events—would appear to be the case, for when one is studying the former birds they certainly seem to be on the feed more frequently than the grouse. An explanation of this fact may be that on the higher grounds, where the ptarmigan have their home, the heather, crowberry and blaeberry, on which they feed, have not the same nourishment in their tissues as on the richer soil of the lower grounds. Grouse are notoriously greedy birds, and two cocks shot last autumn contained between them no less than three pounds of grain stolen from a field adjoining a grouse moor. On the other hand, when staying lately at a bothy many miles from the nearest cultivated land, I found that the grouse in the neighbourhood had no liking whatever for corn, for I purposely scattered a large amount of grain around the bothy, and not a single seed was eaten. This seems to show that the grouse's love for corn is purely an acquired taste.

Swifts in a Storm.—During the autumn migration of these birds in 1910 I had an interesting view of a small company of them making their way with the greatest difficulty against a severe storm. The day had been quite fine, but suddenly, just after midday, a heavy thunderstorm broke over the district, and the rain fell for some time literally in sheets, while the thunder was loud

and continuous. In the thick of the storm a flock of swifts passed overhead. They had the wind and rain against them, and were having the greatest difficulty in making their way through the storm. Flying at a speed of less than twelve miles an hour, they would every now and again hang in the air for a moment, shaking themselves vigorously. They were evidently in an exhausted state, for never before have I seen the flight of a body of swifts reduced, as it were, to a walking pace. Why is it that the swift, though one of the latest of our spring migrants to arrive at our shores, leaves us so much in advance of the swallow and martin? There certainly does not appear to be any particular reason why they hurry south at a time when some of the later house-martins are still sitting on clutches of eggs.

Ptarmigan and the Weather.—Once while on the hills in November I secured some interesting notes on the effect of a sudden storm on the ptarmigan. The closing day of October was an exceptionally wild one, with a violent gale and continuous heavy rain out of the south-west. During the night the wind veered a few points to the north, and next morning found the hills coated with snow to the base. On a certain hill much frequented by the ptarmigan, but where I never before remember having seen them below the 3,000 foot level, I was surprised to flush large coveys at a height of little over 2,000 feet. The storm, though sudden, was by no means severe, as not more than a couple of inches of snow covered the ground, and it seemed curious that a bird so hardy as the ptarmigan should be driven down by a few hours of wintry weather, especially when one remembers that even in midwinter they are found near the same levels they frequent during the summer. The birds I saw had not, except in a single case, assumed the full winter dress. The exception—and a very striking one—was a cock bird, which was conspicuous in a plumage of spotless white. It would be interesting to know whether the age of the bird determines the period at which the winter dress is assumed, for the young ptarmigan are somewhat later than their parents in assuming the full winter plumage. I attempted, without much success, to obtain some photographs of the ptarmigan in their snowy surroundings. In

one exposed spot a covey of these birds were sheltering behind some stones and were busily engaged in feeding. Directly they left the shelter they were wellnigh unable to face the heavy wind and blinding snowdrift, and crouched low on the ground, occasionally being almost blown off their feet when they attempted to move. I was able to approach to within a few yards of their leader before he took wing; but the conditions were all against successful photography.

The Ptarmigan in Autumn.—When I crossed the watershed (2,800 feet above sea level) between Braemar and Aviemore, on October 1, 1911, the weather conditions were arctic to a degree, the ground being covered with more than two inches of snow, with a temperature well under freezing point. From a corrie somewhat sheltered from the north wind I watched for a time some ptarmigan feeding a little distance away on the tender shoots of the blaeberry (*Vaccinium myrtillus*). One individual I had under observation was in an interesting stage of plumage. His breast and under parts were in full winter plumage of spotless white, while on his back not a single white feather was showing. Another bird feeding near showed more or less the same colouring, though not in quite so pronounced a manner. The result was that the ptarmigan were with difficulty distinguished from the rocks, on which the snow had more or less melted as it fell. It is only exceptionally that the ground is so snowbound in early October, and it would be interesting to discover why it is that the upper parts of the bird are the last to assume the winter plumage. It may certainly be said that the reason is an obvious one—that the lower parts change colour first in order that the bird may not be too conspicuous before the advent of the snows; but why should not the whole plumage change gradually and uniformly? The only time when the ptarmigan are out of harmony with their surroundings is when the hills are free of snow (as is sometimes the case) in early December, when the snow-white ptarmigan offer an easy mark for their fierce and remorseless enemy, the golden eagle.

Migration of the Wheatear. — Of all our summer visitors the wheatear is probably the last to go south; on October 11, 1910, I noted a specimen on Lochnagar, and

on the 7th I saw another individual on the slopes of Ben Muich Dhui. Of course, it must be taken into consideration that the weather had been truly wonderful. Day after day the sun shone continuously and with great power, while the wind was usually soft and from the south-west. The wheatears are great lovers of the mountains, and I have seen them on a hot July day congregating near a snow-field and running about on its cool surface with evident enjoyment. Although the last to leave, wheatears are probably the first of our migrants to appear on the hill-sides, and often a heavy snowfall occurs after their arrival; but, still, I have never yet come across a dead wheatear after one of these April storms, and I imagine they are better fitted to withstand the cold than the majority of the migratory birds.

A Robin's Curious Behaviour.—I was once a witness of very extraordinary behaviour on the part of a robin. I had stopped my car for a moment to speak to a friend, and noticed a robin fly up and perch on a wire some yards away. The engine of the motor was kept running, and soon the robin began to sing, at first in scarcely audible notes, but soon with full vigour. It certainly appeared as though he were singing in rivalry against the engine of the car, and so, to see what the result would be, I slowed down the engine, whereupon the robin's song became fainter in response. Immediately I switched off the motor the small songster flew down to the ground and fluttered against the wheels of the car, as though endeavouring to discover what had made the peculiar noise he had heard, and then, apparently having satisfied his curiosity, he flew back to the wire, where he remained motionless for some time before flying away into the thick undergrowth which fringed the road.

Migration of the Whimbrel.—A short time ago I had occasion, on a boating expedition, to row past the estuary of the river Avon, where I had the good fortune to observe a pair of whimbrel resting a while on their way to their Southern haunts. Even at a distance the birds were unmistakable, but they permitted of a near approach, and I had an excellent sight of them as they took wing in a southerly direction, uttering their curious twittering call-note. In many respects the whimbrel closely resembles a

miniature curlew, especially when feeding on the mud-flats, and it is somewhat difficult to account for the fact that while the curlew nests abundantly throughout these islands, the whimbrel remains with us, during the summer months, only in one or two favoured localities in the extreme north of Scotland. The more one studies the migration of birds, the more mysterious—in many cases at all events—does such migration appear. Why, for instance, should the whimbrel —a bird which presumably finds the winter too cold to remain with us—continue on its northern flight beyond these islands, while the curlew, a close relative, finds both its summer and winter needs supplied by our climate? The matter is, I think, as inexplicable as are the habits of the ring-ousel as compared to the blackbird. In this case, again, we have a bird which, while migrating south on the approach of winter, invariably nests at a higher level and in a more exposed situation than its relative with whose song we are all so familiar.

The Capercaillie in Scotland.—The capercaillie's history in Scotland is an interesting one. In olden days it was comparatively common, but the gradual diminution of the ancient forests had probably much to do with its extinction. It was, however, reintroduced from Sweden in 1837, and since that date has spread over nearly the whole of Scotland. It used, a few years ago, to be most abundant in the counties of Perth and Forfar, but has since spread north, and at the present day there is scarcely a wood of any size in Aberdeenshire that does not contain a number of these birds. A short time ago a young caper flew through one of the windows of the Aberdeen Post Office, creating great alarm for the time being. The bird was evidently migrating, though the capercaillie nests within a few miles of the city; but it had seemingly become bewildered by the noise and had descended, with disastrous consequences to itself and also the window. The derivation of the name "capercaillie" (or capercailzie, as it is often called) is very doubtful; "gobur" (a horse), "cabhar" (an old man), "gabur" (a goat), are all Gaelic words from which the first part of the name might be derived, though it is evident that "caillie" is a derivative of "coille" = a wood. The caper has

a wide range—from Great Britain to Kamchatka—but the Russian birds are heavier than the British specimens, which latter rarely weigh more than twelve pounds.

The Hoodie as Scavenger.—The grey or hoodie crow is nowadays rarely shot in the Scottish deer forests on account of the service it renders to the stalker. When a stag has been shot, hoodies appear as if by magic from every direction, well knowing that a feast is destined for them. After the "gralloch" the entrails of the stag are left on the hill-side, and the hungry hoodies in a short time have removed all traces of the unsightly remains. The grey crow is welcomed in the forests on account of its scavenging propensities. After the stalking season many stags which have been badly wounded die on the hill-sides, and were it not for the hoodies, helped to a certain extent by the golden eagles and foxes, the decaying carcasses would lie on the hills throughout the winter. As it is, however, they are soon eaten by these scavengers of the forests; and only a short time ago I noted a striking instance of the quick work a flock of hoodies can make of a dead stag. The carcass had been picked almost clean, and yet obviously it had lain there only a week or ten days at the outside. All round the remains the grass had been flattened by the hungry birds as they fought over the spoil, and on my arrival I observed one or two individuals soaring about in the distance, and only waiting for my departure before returning to their interrupted feast. Except in the forests the hoodie is universally disliked on account of the mischief it works among the eggs and young of game birds; and there is no doubt that the crows do a considerable amount of harm to the progeny of the grouse, and more especially of the ptarmigan, as the latter birds nest in such exposed situations that the sitting hen is seen at a distance by the lynx-eyed hoodie. Although the grey crow nests with us in considerable numbers, a great many migrate to this country from Scandinavia during the winter months, and often large flocks may be seen at different points of the east coast, having just come in from the North Sea.

A Tame Hind.—In one of the upper Deeside forests there is at present a hind which is showing the most complete

absence of fear where mankind is concerned. The hind—a true wild beast of the forest—was gradually tamed by timely gifts of turnips, and soon made herself quite at home near the bothy where a number of estate workmen were employed. At luncheon-time she would stand and call at the entrance of the hut, and refused to become quiet until a share of bread had been doled out to her. It should be mentioned that her calf on these occasions always remained behind at a respectful distance, apparently not sharing his mother's trust in her human friends. At length one day a workman, to test the trustfulness of the hind, held a slice of bread between his teeth and stood at the entrance of the bothy. The hind, without hesitation, walked up and calmly began to devour the morsel held out so temptingly towards her!

The Ptarmigan's Change of Plumage.—In October the ptarmigan rapidly change their summer plumage for their winter dress of spotless white, and are often conspicuous objects on the dark hill-sides, affording the golden eagle somewhat easy prey. The primary feathers of the ptarmigan are always white, but the secondaries and the feathers of the breast are the first part of the plumage to whiten. Then gradually the white feathers push up through those of lichen colour on the back, giving the birds a curious speckled appearance. It is not until December that the birds assume their full winter plumage, but by the latter half of October white is the predominant colour, and should November find the hills comparatively clear of snow, the ptarmigan crowd to any small patches and remain on them throughout the day, only venturing a short distance to feed. They know well that their white plumage makes them very conspicuous objects, and the fox and golden eagle are ever on the look-out for the mountain grouse. During some expeditions on the Cairngorms and Lochnagar I had the opportunity of observing the change of plumage of the ptarmigan in the two districts, and, as far as could be observed, it seemed to be the case that the birds on Lochnagar were more advanced with their winter moult than those on Ben Muich Dhui and Braeriach. Certainly the birds on Lochnagar were showing up very clearly against the dark hill-side, and when they took wing were extremely beautiful. The young birds are

late in assuming the full winter dress—as late as September 15 a stalker informed me that he had just come across a brood of ptarmigan as yet unable to fly, and on September 24 I saw a young bird by no means fully grown. It is somewhat doubtful whether these late broods are sufficiently hardy to weather the winter. Should October be fine, they probably are able to face the November storms; but when, as is often the case, winter descends on the mountains before October is many days old, they must be very hard put to it to survive the early advent of severe weather. I once came across a ptarmigan lying dead on some rocks on Braeriach. The bird was in excellent condition and plumage, but when lifted up blood was seen to be dropping from its bill. Evidently it had been struck down by an eagle, for the king of birds does not only kill for food, but should a ptarmigan cross his path he may strike the unfortunate bird to the ground. He will also give chase, seemingly for mere amusement, for I have seen him pursue a flock of ptarmigan, and, singling out a bird, shoot after the fugitive until he had almost overtaken it, when he suddenly swerved to chase another luckless individual in a similar manner, without ever actually capturing a bird.

Arctic Weather in October.—The last week of October in 1909 was marked by wild weather conditions in the Highlands. After a period of extremely stormy weather, with gales almost daily from the west, the wind on the morning of the 24th went round to the north, and a heavy fall of snow took place on the uplands. Throughout the whole week and up to November 1 snow fell in lesser or greater quantities, the heaviest fall being on the morning of the 29th, when eight inches fell in the course of a few hours. Snow in October is by no means an unusual occurrence, but in this instance the accompanying frost was exceptionally severe, as many as twenty degrees being registered, and the lochs and ponds were frozen from bank to bank, so that in many districts curling was being engaged in when the frost gave way. I was on the high hills for a couple of days during the cold spell, and it was hard to realise that the month was October and not January or February, so severe were the weather conditions. The deer were driven down from the hill-tops

by the cold, and I had an exceptionally fine view of a large herd, consisting of some dozen stags and a hundred or more hinds, feeding on a hill-side barely sprinkled with snow. The stags were roaring continuously, and constant skirmishes occurred between them, a young stag venturing too near a lordly royal being promptly repelled with no uncertain measures. I noticed a great many stags, principally young beasts, without a following of any hinds, and they seemed to feel their isolation compared with the stags which were feeding proudly with perhaps twenty hinds browsing near.

Powers of Flight of the Eagle.—Near Loch Etchachan I witnessed an instance of the golden eagle's extraordinary powers of flight. An individual came sweeping up the corrie, and, having satisfied himself that there was no prey in the vicinity, soared in spirals to a height of several thousand feet in the course of a little more than a minute. A northerly wind was blowing against him, and he seemed to lean on the wind during his ascent, the wings never being moved. Having reached a great altitude, he appeared to shoot against the wind at a tremendous speed, with wings bent back so as to seem almost closed, and soon disappeared over a ridge of Ben Muich Dhui. On the shores of Loch Etchachan—which, lying in a corrie of Ben Muich Dhui at a height of over 3,000 feet, is one of the highest lochs in Britain—the grasses were found to be coated with ice several inches thick, as a result of the gale from the west, accompanied by severe frost, which had prevailed during the first day of the storm. The wind had swept the spray from the water on to the banks, and the frost was so intense that the spray was frozen almost immediately, giving all vegetation near the loch a very curious and picturesque appearance.

WINTER

Grouse and the Farmer.—Up to the beginning of December the hills in the Highlands are usually free from snow, but on one occasion snow began to fall about 10 P.M., and in some uplying districts the great depth of thirteen inches was measured at daybreak. As the snow was wet and sticky it did not drift, but covered all the moorlands deep beneath it. A frost next evening formed a crust on the surface of the snow, so the grouse were hard put to it to find food, and two days afterwards, in a high-lying glen, I saw upwards of a dozen grouse feeding on the tops of the corn-stacks outside a farm. Very comical did the birds look as they stood perched on the stacks; but what was remarkable was their extraordinary tameness, for although I stood and looked at them from a distance of only a few yards, they paid little or no attention to me. I noticed a couple of blackcock among them, but they were much more wary than the grouse. Probably the birds could do comparatively little damage so long as the grain was stacked; but when severe weather comes before the farmers of these upland parts have secured their crops they do an immense amount of harm, and the farm hands have to be constantly sent to the fields to scare the grouse away.

The Raven in Scotland.—Although on the decrease everywhere throughout the British Isles, the raven is still to be met with in favoured localities, and possibly his most flourishing stronghold is on the west coast and outlying islands of Scotland. On the east coast he is rarely met with, and on the high grounds of Aberdeenshire, a district eminently suited, one would imagine, to his mode of life, I have only once seen a specimen during several seasons of exploring. To the west of the Cairngorms the raven

is met with in some numbers, and is well known to the Highland keeper on account of his marauding habits. Of all our British birds the raven is probably the earliest to begin nesting operations, and even during stormy seasons the eggs are deposited in February, saying much for the hardiness of the brooding mother bird, who covers her eggs during the fierce snowstorms of early spring. An ornithologist friend once told me that had it not been for the snow on the ground he would never have succeeded in securing a raven's egg for his collection; but the deep snow lying at the foot of the crag on which the nest was placed just afforded him the extra height necessary to reach the eggs. Why the raven should be such an early nester has never, I think, been accounted for. The golden eagle has a good reason for its early nesting, because of the fact that the young eagles take close on three months to leave the eyrie; but the young of the raven are leaving their home just as that near relative, the hoodie crow, is starting housekeeping. As a general rule, in the bird world it will be found that the predatory birds nest comparatively late in the season, the reason being that they prefer, if possible, that the birds on which they prey should have young before their own families are hatched, as then they can feed their chicks on those of their unfortunate victims. Two notable exceptions to this rule are the golden eagle and the raven, and of the two the raven is undoubtedly the more striking.

Wild Cats in the Highlands.—Within the space of one week early in 1909, four splendid specimens of the real wild cat were trapped in a certain district of the northern Highlands. The lengths of the animals were 3 feet 4 inches, 3 feet 2 inches, 2 feet 7 inches, and 2 feet 6 inches, while the heaviest scaled 16 lbs. In each case the fur was in perfect order, and resembled the coat of a Persian cat. A fine female wild cat was a short time before trapped at Lochailort under rather curious circumstances. During several weeks poultry were from time to time missed, and traps were set with a view to capturing the marauders. One morning one of the traps was found to be missing, and a wild cat 3 feet 4 inches in length was found hanging from the railway fence near Lochailort railway station. It had evidently carried away the trap, and had

THE WINTER HAUNT OF THE BLACKGAME

become entangled in the fence in its efforts to leap across it. One cannot help feeling sorry that the wild cat should be so ruthlessly hunted down wherever it lingers in the Highlands, as it is by now wellnigh extinct even in the most remote and inaccessible districts. Not so very long ago the wild cat and the marten flourished on Upper Deeside, but now they have both been exterminated in that district, and this will soon, I fear, be their fate in their last wild strongholds.

Birds' Premonition of Weather Changes.—A great deal has been written as to the ability of birds to foretell a change in the weather, but a couple of instances which I noted seem to show that birds have but little proficiency in forecasting a change from frost to thaw. Christmastide of 1908 will long be remembered by the inhabitants of the north-east coast of Scotland, on account of the extraordinary storm which swept the coast-line during the last few days of the year. Commencing on December 26, the storm culminated on the 29th in a blizzard of wind and snow from the south-east. Curiously enough, the barometer throughout the storm remained at a high level—about 30 inches—and was actually rising while the storm was raging most furiously. Some 18 inches of snow fell during the time, but the exact depth it was impossible to ascertain on account of the severe drifting. Those parts of Aberdeenshire bordering the sea coast experienced the full force of the storm, and roads and railways were hopelessly blocked. Some idea of the weather conditions may be gained when it is stated that a village within two miles of the city of Aberdeen was completely cut off from the town from Monday night till midday on Wednesday, and not a letter or paper was received during that time. The railway from Aberdeen to Peterhead was impassable for exactly a week, and mails and passengers had to be conveyed by sea. Many trains were buried in the drifts, in some cases being completely lost sight of in the snow. The birds, naturally, were put to sore straits, as the temperature remained below freezing-point for several days, and on the morning of December 30 I noted large numbers of snow buntings, bramblings, and fieldfares all flying in a south-west direction, in the teeth of a strong wind—so strong that in their weak condition they had difficulty in making progress

against it. The snow buntings were the most numerous, although they are but rarely seen in the district. Evidently they hoped to find the storm less severe farther south —as a matter of fact, a score of miles to the southward it was even more severe—but only a few hours after they had passed, the wind, without shifting, became warmer, and bare patches rapidly appeared in the fields, so that, had the birds remained, they would probably have found food before evening. The second instance occurred on January 15, 1909. There had been a heavy fall of snow overnight, but the day was fine and frosty, with a slight north wind. Towards afternoon I saw many snow buntings moving south over the city of Aberdeen, which seemed to indicate a continuance of the storm. Before next daybreak, however, the wind had backed to the south, and the snow quite disappeared during the course of the day.

Unusual Appearances of Moorland Visitors.—During the first ten days of December, 1907, the weather on the moors was very mild, with an absence of snow and frost, and in several districts of Aberdeenshire the lapwing was heard about December 8. The birds were inland only a very short time, however, as the weather soon changed to hard frost and snow. On the 8th, also, a large flock of golden plover were noted on an exposed moor, and were wheeling and calling as though they had returned to their nesting haunts for the spring. It would be interesting to know whether these birds had merely halted on their journey from northern lands, or whether they had made the mistake of thinking spring had arrived, and had migrated inland on this account. The curlew is another moorland bird which sometimes miscalculates the season, arriving prematurely at his nesting haunts, for he has been noted inland and uttering his nesting call-note during the first week of January. The redshank, on the contrary, I have never known to appear before spring has really set in, and he rarely leaves the coast before the middle of March, being perhaps the last of the shore-birds to return to the uplands.

The Cry of the Ptarmigan.—The usual cry of the ptarmigan is a deep, mournful croak, which the cock makes use of when rising, and again immediately before he settles.

Recently, however, I heard a ptarmigan utter a very unusual cry, reminding me much of the shrill call of the jackdaw. As it was in November the bird was, in all probability, an immature one, and his voice not fully developed. It seems to be the fact that a great many ptarmigan remain paired throughout the winter months, and are at this season exceptionally confiding. At all events, a spell of severe weather does not cause them to "pack" in the same way as the Red Grouse. Although often paired during the winter, the cock bird does not at that season betray the same amount of anxiety on his mate's account, and often flies off without waiting for her to join him. They roost in slight hollows scraped in the snow, and seem to prefer a snowy bed even when a great part of the hill is free of snow.

Soaring Powers of the Golden Eagle.—To see the eagle at its best one must choose a day of strong winds, as during the calm weather it is not at all imposing in its flight. When the eagle is flushed from her eyrie during a strong wind it is a marvellous sight to watch her shoot out against the gale, and with scarce a movement of her pinions rise in the air with incredible swiftness. On the other hand, if the day be a still one the eagle flaps heavily away, looking very ungainly, and even when she is in full flight seems to have some difficulty in keeping her balance. Perhaps the most remarkable thing about golden eagles is their ability to make rapid progress against a strong head wind with hardly a movement of their wings. I remember one day being on the summit of a hill over 3,000 feet high in the month of January, and so strong was the wind on the plateau that one could stand steadily only with difficulty. Suddenly a pair of eagles were seen approaching dead against the wind at a speed of perhaps thirty miles an hour, and while they were in view they kept their wings practically motionless the whole time. If they had not been flying dead against the wind it might have been surmised that they were using the latter to their advantage, but as it was they were flying absolutely in the teeth of the gale. I have only once seen an eagle flapping his wings continuously—strangely enough, that was when flying with a strong wind—and the speed of the bird in this case must have been well over sixty miles an hour. There was a grouse-drive going

on in the vicinity, so this might possibly account for the eagle's haste. Often when soaring, the eagle—especially when near the ground—holds his wings in **V**-shaped formation; and recently I noticed a pigeon when soaring extending its wings in precisely the same position. During the winter months a pair of eagles will occasionally leave their nesting site and take up their quarters on a well-stocked grouse moor, leaving again, however, in early spring.

A short time ago, when visiting an eyrie, the cock bird came across—pursued by a pair of impudent hoodies—and I had him under observation for nearly ten minutes. He was soaring almost dead against a fairly stiff wind from the south, and yet hardly ever flapped his wings; but I noticed that every now and again he would lie over almost on his side, in order, apparently, to catch a favourable current. The wing feathers were very much spread out, so that one could see the sky through them, and at times the tail was spread out like a fan. For some time he soared in spirals, then mounted higher and higher until, on some clouds crossing his path, it was seen that he was well above them. These clouds had just touched the summit of a hill nearly 4,000 feet high, which lay to the north, and evidently at that height the gale was severe, as the drifted snow was being borne in dense clouds over the brow of the hill. Upwards still, however, the eagle rose, until he had actually reached such a height as to be quite invisible to the eye.

A Young Stag's Fate.—Early in 1911, while on the banks of the river Dee, I was amazed to see a young stag up to its neck in mid-stream and seemingly betraying no interest in my approach. The water at this point was running with great force, and the river was rising fast, consequent on the melting of the snows on the hills. It seemed a most remarkable thing that the stag should have chosen to have such a lengthy bath in the ice-cold water; but nearer inspection showed that the unfortunate animal had one of its hind legs firmly fixed in a crevice of a rock, and was quite unable to move. The force of the current was such that the poor beast had been washed round till its head pointed down stream, and although it tried again and again to force itself against the river, it was

THE STAG'S FATE

This animal was imprisoned in mid-stream through one of its hind legs being caught between two rocks; it was engulfed by the rising river

invariably swept back. If the current had not been so fierce it could, in all probability, have released its imprisoned leg by putting on the strain from a different quarter; but as it was, certain death awaited it. The head stalker, who lived near the scene of the accident, was hurriedly summoned to shoot the unfortunate animal, but before his arrival the stag had lost its footing and had met its fate.

Red Deer in Winter.—In January the red deer are usually to be met with at their winter quarters in the lower-lying glens and in localities where they are accustomed to be fed, but during the first week of January, 1909, they returned to their summer haunts. I saw large herds 3,000 feet above the sea, and watched at least one parcel crossing a field of snow near the 4,000 feet level. Even on the summit of Braeriach, nearly 4,300 feet above the sea, I saw fresh footmarks, and on mentioning this to an old stalker he stated that he never before had known of stags at such a great height in mid-winter. Thus, while the districts near the coasts were still in the grip of the blizzard, the deer were frequenting haunts where they are usually found only during the finest summer weather—a strange contrast in districts less than sixty miles apart.

A Blind Stag.—A stalker recently told me a pathetic story of an old stag. He was out hind-stalking one day, and noticed a certain stag at the edge of a wood. The animal quite ignored his presence, so he approached to within a few yards, and was beginning to think a friend had played him a trick and had set up a dead stag, when he noticed that the only eye of the beast which he could see was quite useless. The stag was standing broadside on to him, and he stated that he was actually peering round the animal's head to see if the other eye was blind also, when the stag gave an immense leap and bounded away over the hill-side. Besides being blind in one eye, the unfortunate animal must have been stone deaf, for as he approached the stalker shouted loudly at intervals, without the least effect.

The Call-note of the Ptarmigan.—While watching the movements of a pack of ptarmigan one winter's day I was struck by the variety of call-notes of which the birds made use. Besides the usual croaking cry, the male birds at times gave utterance to a long-continued call, which reminded

one of nothing so much as the winding of a clock or the deep hum of a fishing reel. Ptarmigan are much more demonstrative than their near relatives the red grouse, for the whole time one is in the vicinity the birds keep up a continual croaking, and it is curious to think that their scientific name should be the totally misleading one of *Lagopus mutus*.

Their Knowledge of a Coming Storm.—The day I had the above-mentioned pack under observation was exceedingly wild and stormy. All the morning a strong sou'-wester had been sweeping the pass and melting the snow; but towards midday the rain ceased, and the wind veered to the north-west. I was in a corrie some 2,500 feet above sea level, and succeeded in stalking a pack, having an excellent view of them from behind the shelter of a rock. The weather by this time had turned stormy, and dry snow was being drifted along the hill. The pack I had under observation was being constantly increased by fresh arrivals sweeping down from the higher grounds, and I noticed that, although the New Year was in, one of their number had not as yet assumed full winter plumage. The birds looked very quaint as they ran down the hill-side. Taking advantage of a temporary lull, they would set off in a hurry, but before they had gone many yards a gust of wind would overtake them, and they would be forced to quicken their steps, being almost blown off their feet. Immediately they felt the gust, however, I noticed that they turned as one bird and faced the storm, crouching flat on the snow. Some of the new arrivals came down from the heights on foot, others on the wing, and the arrival of these latter caused a certain amount of annoyance to those already assembled. After a time they all took wing together and disappeared down the hill. A little later on I came upon some of them feeding at the very low level of 2,000 feet; but the ground they were on was much exposed to the storm, and they soon disappeared up the hill. On following them I found a great number feeding perhaps 500 feet higher up in a corrie somewhat sheltered from the piercing northerly gale, so that evidently they had been examining the different levels for shelter and had congregated at the one place, where they were in comparative quietness.

They knew that a storm of exceptional violence was in the air, and in the course of the next half-hour the storm descended on the mountains in all its fury, when a continuous blinding cloud of drifting snow, travelling at the speed of an express train, obliterated every object more than a few yards distant, and in a few hours covered the river with an unbroken white sheet.

Their Winter Feeding.—Many of the ptarmigan I saw were feeding eagerly on the young shoots of the heather, and when an individual had "pegged out his claim," as it were, he strongly resented the presence of an intruder, even when there was feeding in plenty for both of them. Once I observed a second bird attempt to share the feeding with one who was already in possession of a fairly large clump, but he was driven off by the owner with great fury. It was worthy of note that during an expedition made a day previous to the storm not a single ptarmigan was met with at a height of 3,000 feet above sea level, but between 2,000 and 2,500 feet they were seen in considerable numbers, and mixed freely with the red grouse. On another occasion lately I noticed a number of ptarmigan feeding on the stems of the blaeberry, but found that plants of the club-moss (*Lycopodium selago*) in the vicinity were left untouched. On another part of the hill-side the birds were picking off the fresh shoots of the crowberry. I noticed, on visiting their haunts on the morning after two days of very severe snowstorm, that the birds appeared in a semi-exhausted condition and were unwilling to move. Several times in running across ice slopes they slipped and tumbled about in a ludicrous fashion, and while walking "leaned" on the wind very much in the manner of a human being on these occasions. I found it usually the case that the ptarmigan were most easy to approach in the morning, later on becoming wilder and more restless, and being difficult to get near after 2 P.M. On one occasion an individual bird resented the presence of another near its feeding-ground, and, in a half-hearted manner, made as though to drive it off. The assailed one, however, instead of beating a retreat, turned on its assailant with great fury and routed it with ignominy. I had a flock under observation for some time on ground over which I had

passed some little time previously, and was interested to see that they used my footmarks in the soft snow as shelters from the wind. Often an individual would doze for a few moments, wellnigh hidden from sight, but would usually be herded out by a stronger bird, though there were many footmarks vacant all round. Sometimes a ptarmigan appeared dissatisfied with its roosting hollow and walked off to try another, and I noticed some of the birds pecking at the snow as they sheltered. Comparatively few of the ptarmigan were spotlessly white—most of them had a dark feather or two somewhere on their backs—but the cocks were always prominent by reason of their conspicuous combs, and their habit of strutting around during a lull in the wind, with tails held up after the manner of a pouter pigeon.

Footprints of the Ptarmigan in the Snow.—The illustration facing page 237 shows very clearly the tracks made by ptarmigan to a small sheet of open water during a recent snowstorm. One often wonders how it is that these mountain grouse are able to eke out a livelihood at their wild haunts, but the scarcity of water from which they must suffer is usually overlooked. Nevertheless, this complete absence of water after a heavy snowstorm must be a source of great inconvenience to the birds, as every little burn and lochan on the hill-sides is deep under snow, though during times such as these ptarmigan probably have recourse to eating snow.

Weasel and Mouse.—Once while motoring along a country road a weasel crossed my path, carrying in its mouth a mouse of considerable size. For some distance the animal attempted to run before the car carrying its prey, but the burden proved too heavy, for it dropped the mouse—which was dead—and disappeared into a wood. The weasel seems to be very partial to mice, for I have seen it "working" mouse-holes in a systematic manner, going down each in turn to see, apparently, if any of the occupants were at home, and allowing me to approach to within a few yards. Occasionally stoats and weasels are found at high altitudes, and only a short time ago I was interested to see one of the former at a height of 3,600 feet. The day was bright and sunny, though there was a thin coating of snow on the ground, and the stoat was running

FOOTPRINTS OF PTARMIGAN IN SNOW

actively about among some stony ground overlooking a loch. The marauder was evidently on the hunt for something, and, as I had flushed a large covey of ptarmigan immediately before, the stoat may have been attempting to scent them out.

The Stonechat in Winter.—The stonechat is usually thought of as a summer visitor to our islands, but, unlike most of its relatives, it may—and not infrequently does—stay with us during the winter months. Once during a very wintry spell of weather, I watched for some time a stonechat searching for food on the sunny side of a bank near the river Don. At first I could not be sure of the identity of the bird, but a closer inspection showed him to be a stonechat without doubt. Even among the half-melted snow he seemed to be discovering food without much difficulty, and flitted about among the undergrowth, flirting his tail in a characteristic manner. The stonechat during the winter months seems partial to the putting-greens of certain seaside golf courses, and I have often noticed him during a round. He is very local, however, and in many districts of Scotland is quite unknown. For instance, on the Aberdeenshire coast he is met with fairly commonly, but in the adjacent valley of the Dee is practically absent. During a visit to the north-west of Spain in April, 1909, I was much struck with the great numbers of stonechats met with everywhere, for they seemed to be one of the commonest birds of the district.

Early Signs of Spring.—Although signs of a recent severe snowstorm were still evident, in the shape of wreaths lingering in sheltered places, the weather in January, 1909, was quite suggestive of spring in many ways, notwithstanding heavy frosts overnight. The curlew were still haunting the fields near the seashore, but were undoubtedly beginning to feel the impulse of spring, for on January 23 I heard the wild, vibrating whistle which one hears with such pleasure during the spring and early summer on the lonely moorlands. This whistle—which commences in a low key, rises and then falls again, ending, usually, in a wailing cry—is equivalent to the spring call of the lapwing or green plover, and is the song of the male bird. Many naturalists are of opinion that the curlew never calls when on the ground;

but at the time mentioned I had a flock under observation, and noted that many of the birds were calling loudly while running or walking about in a turnip field. Another sign of spring is to be found among the black-headed gulls. During the autumn and winter months these birds belie their name "black-headed," as the feathers on their heads are as white as the rest of their plumage; but towards the end of January their heads become speckled, and soon after assume the dark brown colour of the nesting season. The carrion crow, too, is then to be heard uttering his love song—a harsh "caw" uttered repeatedly from the summit of some lofty tree—and on one occasion as early as February 3 I noticed a pair of sparrow hawks hunting together—probably newly mated birds, for the sparrow hawk does not, as far as my experience goes, mate for life, as is the case with the golden eagle.

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